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AUTHOR Kreinberg, Nancy
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ABSTRACT

The design, implementation, and evaluation of a science career workshop for women are addressed. The workshop objective is to increase the percentage of women in the scientific workforce and in upper levels of scientific and technical research, development, and management. In designing the workshop, the following areas should be assessed: goals for the workshop, the target audience, areas of science and engineering that will be included, data that will be needed to evaluate the workshop, and post-workshop goals. After resolving the basic decisions, the workshop format should be developed. Examples of different kinds of conference formats are appended. Additional considerations are: managing and financing the workshop; making arrangements (e.g., selecting a location, meals, parking, and other details); identifying and recruiting presenters; recruiting participants; generating publicity; collecting resource materials and handouts; doing the workshop; conducting the evaluation; and developing ongoing and new activities. Appended materials include a list of resource materials; sample evaluation forms; and lists of associations and committees of/for women scientists, associations of/for scientists of racial and ethnic minority groups, and directors/codirectors of National Science Foundation career workshops. (SW)

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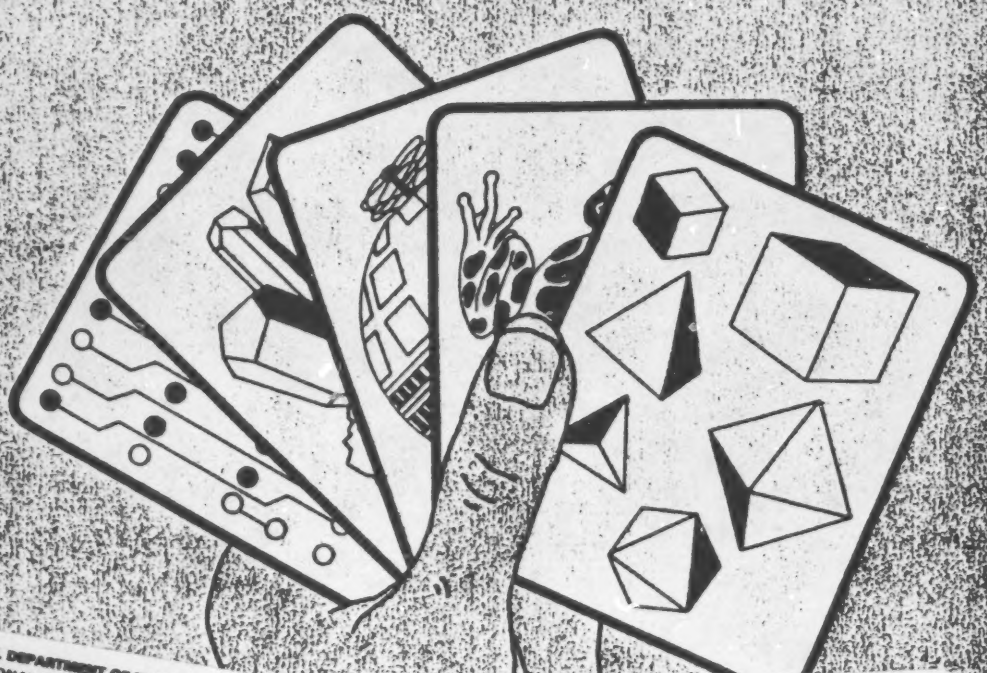

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HE 014 515

Ideas for Developing and Conducting a Women in Science Career Workshop

Nancy Kreinberg, Director
Math and Science Education for Women
Lawrence Hall of Science
University of California, Berkeley

This material is based on work supported by the National Science Foundation through grants to a number of educational institutions and through a purchase order to the Math/Science Network, Oakland, California for preparing and editing the manuscript. Any opinions, findings, and conclusions or recommendations are those of the contributors and do not necessarily reflect the views of the National Science Foundation.

Foreword

In 1976 a Women in Science Program was established in the National Science Foundation's Directorate for Science and Engineering Education, with the objective to develop and test methods to attract women to and retain them in scientific and technical careers. One of the methods developed is the one- or two-day Science Career Workshop, which is designed to provide factual information and practical advice regarding careers in science to undergraduate women science students and women with science degrees. During the six years of the program, NSF has made a total of 136 workshop grants in 38 states, the District of Columbia, and Puerto Rico. From 1976 through 1979 these workshops were directed to undergraduate and graduate students. In the projects supported in 1980 and 1981 at least one-third of the participants were expected to be post-baccalaureate women with at least a bachelor's degree in science who are not in graduate school and are unemployed or underemployed in science.

Those who have managed, participated in, and observed NSF-supported Workshops have collectively gained much knowledge about how to develop and conduct one successfully. NSF decided therefore that it would be useful to pool and package this knowledge and make it readily available in booklet form to directors of future workshops, whether supported by NSF or others. The resources used in carrying out this task have included final reports prepared by project directors, site visit reports prepared by third-party evaluators, internal documents prepared by NSF staff, workshop materials furnished by project directors, and—above all—the talent and hard work of a team of eight project directors who met in Washington, D.C. on August 6-7, 1979, to draft chapters for the booklet. The efforts of this team were orchestrated by Nancy Kreinberg who put the chapters into a coherent whole. The resulting draft was then sent for comment to directors of workshops funded from 1976 through 1979. All who responded felt that future project directors would find such a booklet useful, and a number offered suggestions for improving it. Many of these suggestions were incorporated in a second draft which was sent to directors of 1980 projects.

With the passage of NSF's FY 1981 authorization act (Public Law 96-516), it became clear that further dissemination of this booklet was appropriate. Title II, the "Women in Science and Technology Equal Opportunity Act," directs NSF to support activities designed to improve the scope, relevance, and quality of information available to the public concerning the importance of the participation of women in careers in science and technology through the use of radio, television, journals, newspapers, magazines, and other media. It also directs that the results of research and demonstrations be made available to the public through appropriate dissemination mechanisms. Publication and wide dissemination of this booklet is seen as responsive to these mandates.

A few words about the booklet are in order. The fact that most of the workshops supported by NSF have been for college students is reflected in the booklet. Recommendations are fewer for workshops directed to women with science degrees who are not currently affiliated with educational institutions and for those directed to high school students. Fortunately, in the latter case, Nancy Kreinberg has been able to draw on her knowledge of the extensive experience of the San Francisco Bay Area Math/Science Network in dealing with high school students.

It is important to understand what this booklet is and what it is not. It is intended neither as a guide for the preparation of proposals to NSF nor a policy manual for NSF grantees, but as a source of ideas for those planning and carrying out workshops and similar activities. For all who use the booklet it is not a set of prescriptions aimed at stifling originality and creativity; it is a set of suggestions based on the experience of a number of imaginative people.

The National Science Foundation recognizes the importance of the work of all those who have made Science Career Workshops an important component of the Women in Science Program. We know their psychic rewards are many, but urge that these be matched with a recognition by the scientific community that they have made a significant contribution to science as well as to women.

M. Joan Callanan
Program Manager
Women in Science Program
Directorate for Science and Engineering Education
National Science Foundation

Acknowledgments

Joan Callanan, Program Manager, Women in Science; Terri Louise Nally, Summer Professional; and Mildred Levin, Secretary, National Science Foundation, provided the encouragement, assistance, and resources to develop and produce this booklet. Sharyn Gayton's artwork and design greatly enhanced the ideas presented.

The content and format were developed, and a first draft produced, in two days of extensive work by seven project directors. Grateful thanks are due to the following people for their extraordinary effort, talent, and good will:

Prof. Ann Benham, University of Texas at Arlington
Dr. Bonita J. Campbell, California State University, Northridge
Dr. Myra Dinnerstein, University of Arizona
Dr. Jana Everett, University of Colorado, Denver
Dr. Anne Scheerer, Creighton University
Prof. Carol Shaw, University of Dayton
Dr. Bonnie Gay Wood, University of Maine at Orono

Thanks as well to the numerous project directors whose excellent materials we have reproduced to assist you in working for women in science.

Nancy Kreinberg
June 1981

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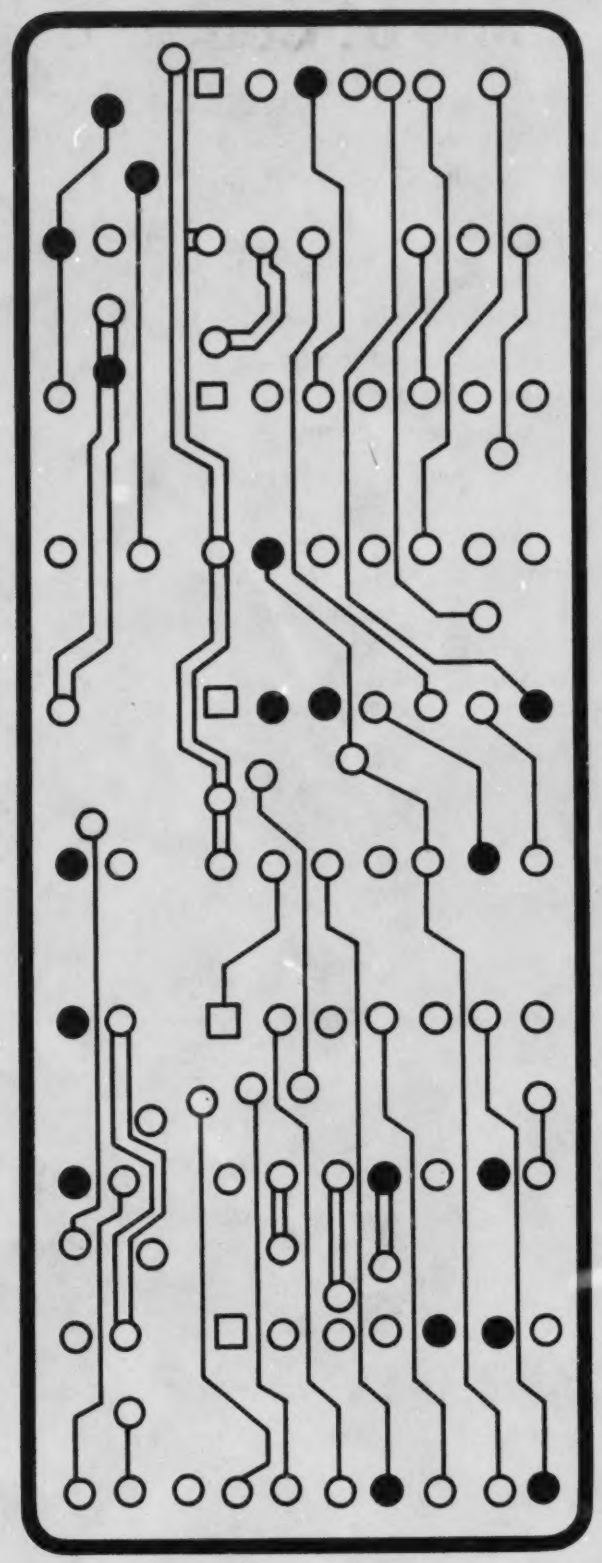


1

Defining the Workshop

The goal of the Women in Science Program is to increase the percentage of women in the scientific workforce and in upper levels of scientific and technical research, development, and management. The purpose of a Science Career Workshop is to assist a specific audience to achieve this goal.

Whether the workshop serves high school, collegiate, graduate, or re-entry women, an important theme is the necessity for participants to set high career aspirations for themselves. For too long, women have worked in low-level, ancillary positions, where opportunities for advancement and self-expression have been limited or nonexistent. There have been few role models of successful women scientists and engineers. Now, fortunately, programs aimed at identifying and encouraging women in science have focused attention on the need for women in scientific work and have increased the visibility of those who are moving up career ladders in their fields.

A Science Career Workshop is an ideal setting in which to reinforce the message that women are performing at high levels of scientific research and management, and that each workshop participant should raise her own expectations of achievement. The formal and informal interactions between participants and women role models during the workshop strengthens this message.

Several decisions that you and your associates make early in the design of the workshop will determine subsequent content, format, evaluation, and future activities. In arriving at these decisions, you may find it useful to ask the following questions.

What are your goals for the workshop? What do you hope to accomplish for your participants, presenters, institution, and yourselves?

Who is your target audience? Will you mix age groups (high school and undergraduate women or graduate and re-entry women), or do you want a homogeneous audience?

What areas of science and engineering will you include? Do you want breadth* or are you interested in concentrating intensively on a few selected areas?

What data do you want from the workshop? In addition to knowing what the participants thought about the event, do you want to keep in touch with them to assess any long-term effects of the workshop?

Do you have post-workshop goals? Do you envision the workshop as a beginning of new activities for women in science in your institution?

Let's look at these questions in turn.

Setting Workshop Goals

Most people plan a Women in Science workshop to achieve several goals for their participants and presenters:

To create awareness of employment opportunities for women in science and engineering;

To encourage women to prepare for careers in these fields;

To provide an opportunity for participants to meet and form personal contacts with women working in science and engineering;

To provide factual information about career options, employment trends, and educational requirements for scientific and technical fields;

* Science Career Workshops funded by the National Science Foundation have been multidisciplinary and have covered the physical, biological, medical, (but not clinical), environmental, social, and behavioral sciences, as well as mathematics and engineering, and interdisciplinary fields that combine two or more sciences (e.g., bioengineering).

To promote networking among people in education, government, and industry that will enhance opportunities for women in science.

Other personal and professional goals may develop:

To improve the condition of women science and engineering students on a campus by raising the consciousness of faculty, administration, and staff about the role of women in science;

To raise the visibility of science and/or engineering departments to students;

To develop a support network of people concerned about the status of women in science;

To create a position on a campus that facilitates the entry and retention of women in science;

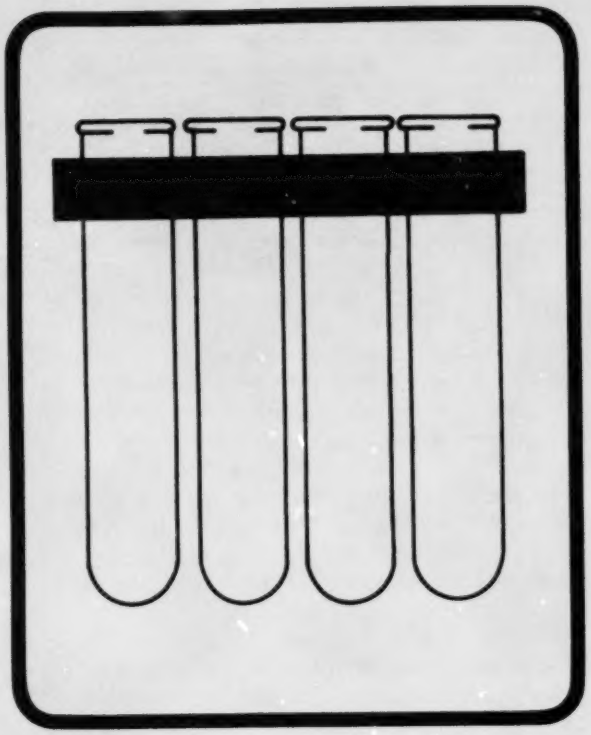
To secure funds from a variety of sources that will ensure the continuation of women in science activities.

Target Audience

The content and format of your workshop will be based on the age, experience, and educational level of your audience. Suggestions are offered about the best mix of audience and content.

Secondary students. Junior high and high school students can be served in one workshop if, during part of the day, you provide small-group sessions by grade levels (7th- and 8th-graders; 9th- and 10th-; 11th- and 12th). Younger students enjoy "hands-on" activities that include doing experiments, trying out equipment, or solving mathematical problems. Older secondary students are most interested in college requirements, recommended college courses, descriptions of a typical day in a particular job, and meeting a variety of women scientists and engineers. Parents, teachers, and counselors also benefit from attending a women in science workshop, and special sessions should be designed for them on college admissions, financial aid, employment opportunities, counseling techniques to promote participation of young women in mathematics and science courses, and opportunities to meet women role models.

Freshmen and sophomore college students. These women appreciate an emphasis on the multi- and cross-disciplinary nature of emerging and established scientific fields. Guidance should be offered about appropriate courses for specific fields and the



advisability of taking courses that will provide the widest career options. Focusing on careers that require a bachelor's or master's degree, rather than the Ph.D, will be most meaningful to this group. Speakers who can convey the adventure and challenge of science and engineering will encourage students to pursue scientific interests.

Junior and senior college students. Upperclass women want more specific information about employment opportunities in the fields that are featured. They are particularly interested in salary ranges, opportunities for advancement, considerations of combining marriage and career mobility, comparisons of employment opportunities in research and management within education, government, or industry, and questions relating to advanced degree work and financial aid. This group also finds sessions devoted to job-seeking skills useful.

Post-baccalaureate students. In this category are at least three very different groups of people: those intending to enter or to exit graduate school; those seeking advancement in

their careers; and those re-entering the workforce.

Graduate students need to find out more about business and industry. Their entire experience has been within academe, where job opportunities are often limited. Exposure to the range of employment opportunities in industries such as manufacturing, electronics, transportation, utilities, or petroleum will be helpful. Speakers who can discuss the variety and scope of management careers in science and engineering, as well as insights into how people acquire the skills and training to move into management, will motivate graduate students to envision more options for themselves.

Women seeking a career change—within or outside their current field—will also benefit from the discussions of technical and managerial career paths. Other topics useful for this group include methods for planning a career change, resources to tap within their companies, and questions to consider when planning a career change. Including women who have successfully changed careers as speakers will be an important experience for this group.

Women re-entering the workforce want to know what employers are looking for in new hires, how they can assess their strengths and weaknesses for the job market, and what educational options are available for gaining new skills and updating old ones. Sessions on resume writing, job interviewing, and building personal networks will be extremely valuable, as will information on financial aid and internship programs.

Selection of Fields

Whether you present a wide range of fields or focus on just a few, the information will be communicated primarily through speakers, with printed and/or visual materials supplementing their discussion. Often, the fields you choose to present are those for whom you can find effective speakers. Locating, recruiting, and training presenters are discussed on pages 17 to 19.

Another consideration of choice of fields will be based upon employment opportunities in your locale, especially for post-baccalaureate participants. If engineering and computer science are booming fields in your area, you may focus more on them. If your institution, and those in your area, are particularly strong in one or several fields, you may highlight opportunities in those disciplines. However, since expanding awareness of many career options is a priority for most workshops, you probably will try to include a balance of fields. Another consideration is that many students will be willing to relocate to obtain employment in their major fields.

One difficulty that workshop planners have encountered is the fact that current employment data indicate that the majority of job offers are in engineering and related fields. Speakers who represent fields where opportunities are limited, such as anthropology or biology, find that participants will choose to attend a high-employment session, leaving them with little or no audience. One way to resolve this is to schedule sessions in which speakers representing a high-employment area are matched with those in a low-employment area. In that way, participants learn about both fields and presenters learn something about fields other than their own. It is especially useful to pair a statistician and/or computer scientist with any social scientist or life scientist, since these are becoming requisite skills in all fields. Sociologists, psychologists, and anthropologists who work in marketing, public or consumer relations, regulatory affairs, or governmental relations provide a good balance with engineers, geoscientists, chemists, etc.

Evaluation

The procedures for conducting evaluation are discussed on pages 29 to 32. In the design stage of your workshop, you want to ask: What do we want to learn and who can help us acquire that information? Most project directors of career workshops are not evaluation experts, and you will benefit from discussions with evaluators. However, you *are* an expert on the goals and objectives of your workshop, so you need not be intimidated by evaluation terminology.

Many workshop planners have found it useful to establish a good working relationship with someone knowledgeable about survey design and analyses and to include that person in the early planning sessions for the workshop. In that way, evaluation becomes an integral part of the planning and can be used to

help you clarify the objectives you intend to accomplish.

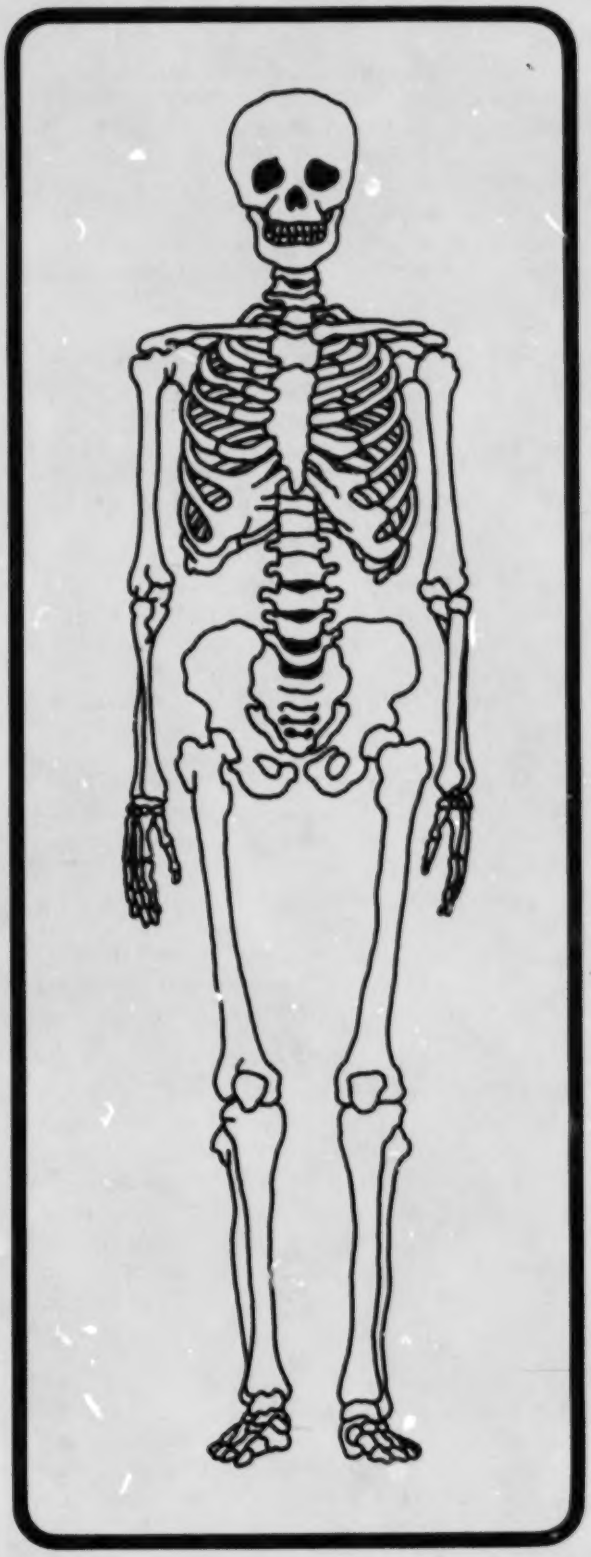
If you are interested in examining the long-term impact of the workshop, you need to plan how to recontact your participants. You probably have thought about how you will use this follow-up information, but an evaluator may be able to suggest further uses and new ideas to think about in planning the workshop.

Spinoff Activities

Most workshops are so successful that the planners cannot imagine concluding their women-in-science activities at the end of the day. Participants and presenters suggest ideas for new programs, and the planners themselves develop many new ideas. In the heat of excitement (and exhaustion), plans are laid and strategies developed. Sometimes these materialize, if there are people to work on them and sufficient resources to draw upon. Past experience indicates that, if thought is given to post-workshop activities that seem desirable *early* in the planning stages of the workshop, you will be more likely to marshal resources to accomplish these objectives.

For example, if you think your campus should have a person who devotes time to assisting the entrance and retention of women in science, then you will include people in your workshop who need to learn about the interest of women in science and the potential benefits to your institution of capitalizing on that interest. If your goal is to increase the number of high school women taking mathematics, then you need to identify key teachers in a school or district that can help you accomplish this and invite them to planning meetings. If you want to develop a Women-in-Science Network in your area, and you think the workshop could be the kick-off activity for that organization, your planning committee may have a different composition than if you don't have that goal. It is more likely that you will be able to develop effective spinoff activities if you consider the potential for such activities during your early planning sessions.

Examples of spinoff activities that have been developed from Women in Science conferences are found in Chapter XI.●



2

Establishing the Format

Once you have resolved your basic decisions, you are ready to develop the workshop format. Appropriate questions at this point include: How will you present the activities of the day, given the goals of the workshop, the audience, fields to be presented, data to be collected, financial resources available, and potential ongoing activities to be developed?

Your format will probably be a mix of large-group presentations by a keynote, luncheon, and/or panel speakers, and smaller-group discussions or activities with role models and participants.

One method to establish format is to brainstorm topics that you want your audience to know about. A conference for high school women had the following morning panel:

9:30 Welcome: Marie Smith, Acting President
Indian Valley Colleges

PANEL

2,000 Years' Worth of Important Information
Constance Carroll, Interim Chancellor
Marin Community College District

Women Need Math and Science
Dr. Betty Schreiner, M.D., J.D.
Chief of Pathology, Kaiser Hospital

Women, Work and Wages
Myan Baker, Consultant
Urban Management Consultants & U.S. Dept. of Labor

Careers for the Twenty First Century
Nancy Tapper, Statistician and Administrator
Center for Social Redesign

Participants then attended "hands-on" workshops that were offered by grade level:

6th and 7th Grades:

1. Exploring Computers (Beginning)
2. Learn Some Simple Carpentry Skills (Bring a hammer with you on the day of the conference)
3. Solar Energy: Make a Solar Cooker
4. An Environmentalist Shows you How to Identify Creeping, Crawling Beings Outdoors
5. A Doctor Tells you Everything You Always Wanted to Know About your Body
6. Microbiology: The World in Miniature in a Microscope
7. Photography: Taking Still Photographs
8. Constructing Model Airplanes

8th and 9th Grades:

9. Plumbing: Fix a Leaking Faucet and a Running Toilet
10. Chemistry for the Artist
11. Predicting a Family's Future with Genetics
12. Architecture: Design a Dream House
13. A Park Ranger Takes You on an Outdoor Discovery Trek
14. Geology: Can Earthquakes be Predicted?
15. Exploring Computers (Beginning)

10th and 11th Grades:

16. Learn Some Simple Electrical Repairs Safely
17. Getting the Most out of your Money
18. Learn to Use a Television Camera
19. Exploring Computers (beginning)
20. Sharing the Outdoors with a Naturalist: Field Trip on Campus
21. Using Math in Music

22. Archaeology: The Miwoks of Marin

11th, 12th Grades and College:

23. Urban Planning: Design a City
24. Auto Mechanics: Learn Some Basic Auto Repairs
25. Alternative Fuels: Fueling the Future
26. Veterinary Medicine: Learning Animal Medicine
27. Chemistry at Work in Engines
28. An Attorney Speaks: Drugs and the Law
29. How to Start Your Own Business
30. Learn to Use a Printing Press

A conference for undergraduate women at Yale University began with a brief welcome from the conference organizers. The participants then attended panel discussions, followed by one-hour seminars, which were open by choice to the capacity of the rooms:

Seminar Topics

Engineering—Indeed a Career for Women

Economics and Philanthropy

Research in Marine Microbiology and Biological Oceanography

Research in Developmental Biology and Genetics

Igneous and Metamorphic Rocks in the Klamath Mountains, Southwestern Oregon: Clues to the Building of the Continent

A Non-Associative Algebraist "Covering" the Undergraduate Curriculum—The Challenge of Teaching Mathematics in a Small Liberal Arts College

ENERGY—Its Fundamental Importance in Chemical Research

Teaching and Research in Oceanography

Computer Models of Human Thought

Environmental Protection: How Much is Enough?

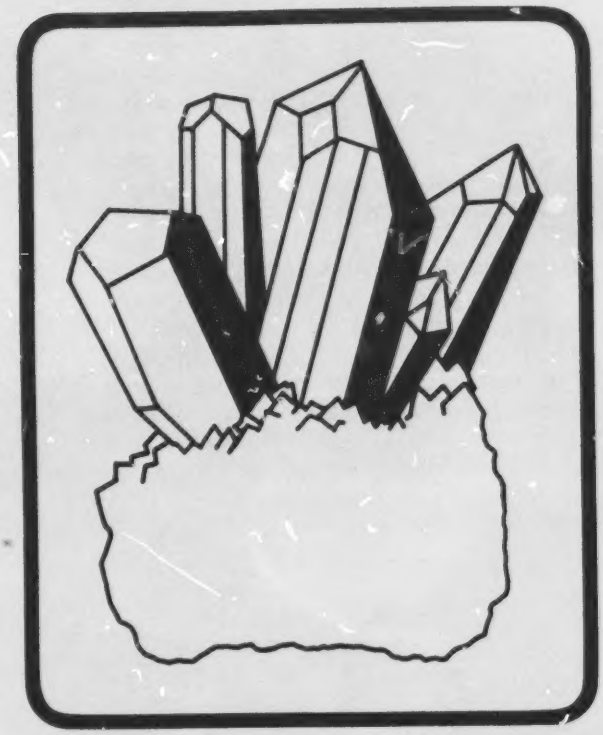
Short Waves and Large Molecules: Vacuum Ultra Violet Light and Photo-electron Spectroscopy of Biological Molecules

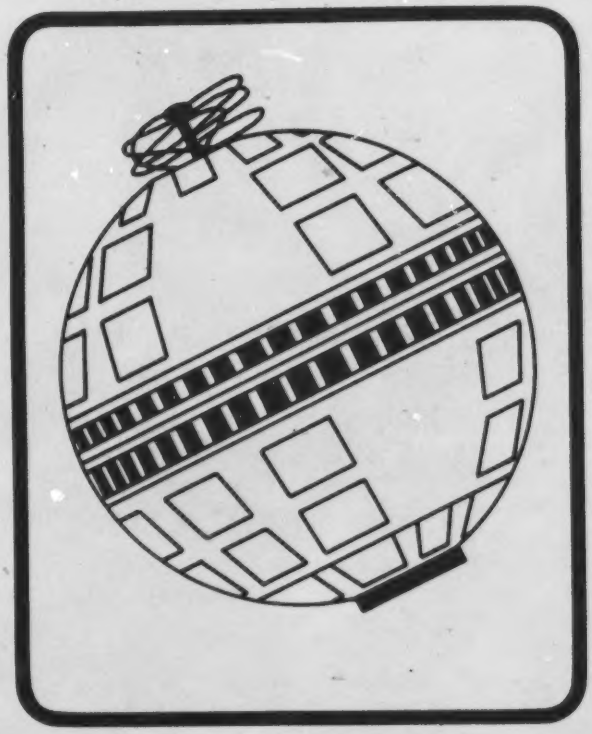
The Natural Scene—Accident or Design?

Electrical Stimulation—The Wonder Drug of the Future?

The Application of Chemistry to Conservation of Stone in Monuments

Effects of Environment on Cancer





Uses of Sciology in Expanding Opportunities for Women

Understanding Sickle Cell Anemia—A Case History of the Contributions of Biophysics and Biochemistry

Coal—Ways to Use It

Will the Universe Expand Forever?

In the afternoon and evening of a two-day conference for undergraduate women at Michigan State University, the following topics were offered:

1:00 **Career Guidance Panels**—A repeat of the 11:00 a.m. offering. Select a second panel to attend.

2:30 **Lifestyles and Options for Women in Science**—Auditorium. Dr. Martha Chiscon, Purdue University. Audio visual presentation of interviews with prominent women scientists in a variety of careers.

3:30 **Refreshment Break**—Centennial Room

3:45 **Lifestyle Planning Issues** You will work in small groups (assignments at registration) to discuss the costs and benefits of single and married lifestyles; issues confronting dual-career couples; strategies for coordinating careers and parenthood; implications of interrupted vs. continuous career involvement; coping with being a newcomer or minority member in a profession; identifying and using support services.

5:00 **Dinner**—At a location of your choice or a residence hall.

7:00 **Psychological Preparedness for Careers: Who Am I? Who Will I Be?**—Lincoln Room. Taking an active role in personal and professional growth, developing skills, learning to find and use appropriate sources of support. You will work with fantasies, self-assessment, identification of blocks, construction of hierarchies, role-playing around vignettes relevant to women developing a lifestyle.

The Math/Science Network presented a conference for post-baccalaureate women with the following format:

9:30 **Panel Discussion:** Networks for Women Moving Up

11:00 **Morning Workshops:**
Career Planning and Strategies for Advancement

Let's Talk About the Graduate Degree: Who needs it, how to pay for it, what are the alternatives?

Employer Profiles: P.G.&E. and Xerox Corporation

Job Options for Social Scientists

1:45 **Afternoon Workshops:**

Career Planning and Strategies for Advancement

Management Opportunities for Technical People

Employer Profiles: Bank of America and Federal Government

High Demand Fields for Science Majors: Computer Sciences and Geosciences

3:30 **Closing Remarks and Reception**

Decisions about Format

The decision to present a one-day, two-day or multi-day workshop depends upon the nature of your institution, target audience, and financial resources. Two-day workshops provide good interaction time between participants and role models, especially if students traveling to the workshop are housed with local women scientists. One-day workshops, however, can include extensive interaction during meals, well-planned discussion groups, and social time.

Workshops that extend over a period of time often incorporate field trips by participants to local industries. If space is available and the audience appropriate, you might invite local employers to display information about their companies. This component works best with an audience composed of graduating college seniors, graduate students, or re-entry women and career changers. The time and effort to coordinate this activity has not been cost effective for workshops directed toward younger college women. When the career display is used, however, it is an excellent way to involve

local industries in your activities and to develop relationships with them that can lead to funding for future activities.

Whatever format you use, vary the activities to maintain participants' interest and attention. If there is to be considerable movement from building to building during sessions, allow enough time for this. Make sure your sessions don't require people to sit for long periods of time and don't show movies after lunch unless you want to put people to sleep.

Several different kinds of conference formats are presented in full in Appendix A.●

3

Managing and Financing the Workshop

The project director is in charge of the overall design and execution of the workshop. To ensure that the workshop is run efficiently, she needs to delegate responsibility to others. It is her final responsibility, however, to see that all goes according to plan.

While it is often the project director's personal effort and involvement in the workshop that makes it happen, it is crucial for her to establish a management plan. There are basically two levels of management with which a project director is concerned: tactical management, which addresses the overall management structure for the entire project, and operational management, dealing with the day-to-day issues and specific items, such as printing programs and ordering meals.

As project director you should primarily concern yourself with tactical management. Start with your basic workshop design, then backtrack from that and consider all the activities that must be performed to accomplish it. Write them down and categorize them. For example, under "recruiting participants," specific activities might include developing a mailing list, and designing, printing, and distributing brochures. Although there are many items you will forget, you can always add them later.

Next, consider the length of time required to complete each of these activities. Estimate as best you can. If you have no idea, ask a colleague who has participated in similar activities. Then, starting with the day of the workshop, move backwards in time and establish a timeline.

Conference planners have taken between three and eight months to prepare for a workshop, depending upon experience and assistance available. A sample timeline in which the workshop is offered in the 8th month might look like this:

Time Line

Activity	Month
Choose workshop date and location; reserve necessary rooms and facilities; establish advisory committee and a management plan	1
Meet with advisory committee; meet with evaluator; recruit speakers and obtain their biographical information for handout material	2 - 5
Establish contacts for participant recruitment	2 - 6
Develop brochure (set pre-registration deadline 2-3 weeks before workshop)	4 - 5
Deliver brochure to printer	6
Confirm arrangements for facilities and meals	6
Mail brochure	6 - 7
Develop handout materials	3 - 7
Recontact speakers to confirm and request audio-visual needs, etc.	6 - 7
Contact media with advance publicity (3 weeks before workshop)	7
Recontact media (1 week before workshop)	8
Package handout material	7
Plan social hour for speakers	6 - 7
Reconfirm arrangements for facilities and meals	7
Conduct meeting for local speakers (1-2 weeks before workshop)	8

Assign participants to workshops based on registration choice (1-2 weeks before workshop)	8
Workshop Held	8
Thank you letters to speakers (1-2 weeks after workshop)	8
Meet with advisory committee to develop spinoff activities	9
Analyze evaluation data	9
Prepare and disseminate report of findings	10

Naturally, you can plan and conduct a conference in a much shorter time. The following time line was developed for a high school conference and allows 13 weeks from beginning to end.*

Weeks to Conference

13 Meet, set date, find site
Outline day and application procedure

12 Begin recruiting speakers and raising money
Make initial arrangements with host institution.

11 Send notices to education newsletters
Get information on lunch costs, distribution time for brochures, deadlines for press releases

10 Check titles and spelling
Design brochure
Begin collecting registration packet materials

9 Discuss evaluation process to be used

8 Take brochure to printer
Get campus maps and look at available rooms

7 Arrange the conference meeting for speakers

6 Distribute brochures and cover letters
Send confirming letters to speakers
Solicit speakers' special needs

5 **Begin registration**
Make initial lunch arrangements

4 Distribute press releases and radio spots
Arrange post-conference gathering for speakers
Write and duplicate evaluation forms

3 Assign rooms
Arrange for equipment, tables, parking

2 **End registration**
Meet with speakers
Confirm lunch arrangements

1 Stuff registration packets
Make signs

0 **Conference Day**

A timeline will enable you to establish milestone days—starting and completion dates for particular activities. You can also give the timeline to others involved in the workshop, so they know what needs to be done and when. This is your first management tool and your first major step in management design.

Now, take your timeline and look at each activity again. Consider the number of people, percentage of their time required during that period, and the expertise of the person (e.g., clerical, faculty) needed to accomplish the tasks. This exercise is most frequently referred to as "man"-power loading and is a second major stage of your management design. It allows you to assess your personnel requirements.

Think about specific people and their talents and start delegating! For example, delegate responsibility for recruitment and coordination of presenters to one person, the publicity plan to another. When the people you want have agreed to accept responsibility for certain activities, develop a "responsibility chart" that keeps you and everyone else aware of the person responsible for each activity.

The last part of your management design will be to establish the financing required in each area. The scheduling, loading, and responsibility charts can help you determine the appropriate budget for salaries and wages. Printing costs and the like will be dependent on the number and quality of items being prepared. The sample budget included in this section provides general guidelines for budget categories.

You now have designed a very basic management plan. Your primary objective from here on is to use that plan to coordinate all aspects of the workshop. But don't cast your plan in concrete—be willing to adjust it as needed as you proceed through the project.

* From: Joanne Koltnow, *Expanding Your Horizons in Science and Mathematics: A Handbook for Planners*, Women's Educational Equity Act Program: Educational Development Center, 55 Chapel Street, Newton, MA 02160.

Sample Budget for One- to Two-Day Workshop
(Up to 300 Participants)

Staff:

Project director	(2-person months)
Project assistant	(3-person months)
Other, e.g., evaluator	(1-person month)
Secretary	(3-person months)

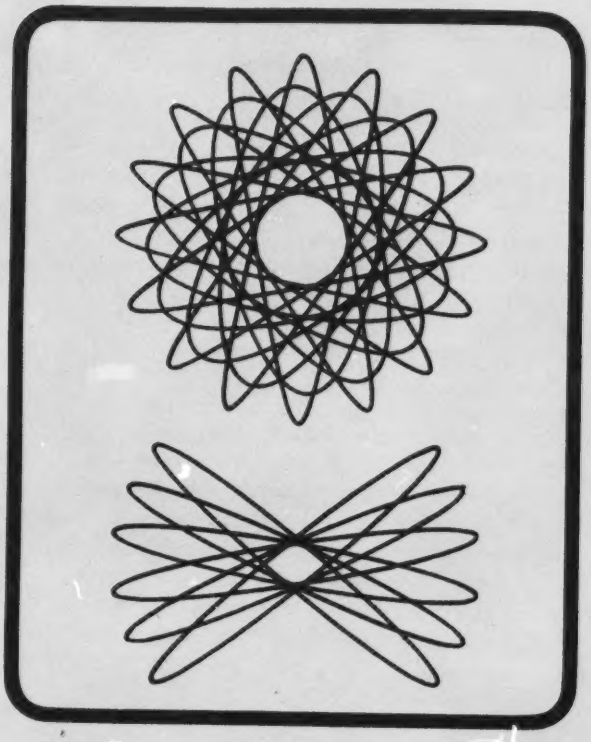
Honoraria to speakers:
Honoraria of $125 recommended for speakers, but professional women may donate their time. Approximately 20 professionals may be needed as speakers and/or panelists.

Travel of keynote speakers or presenters:
Often must be paid even if honoraria are not offered. Industries may pay travel for their people.

Publicity, printing, and mailing	$500 - $1,500
Developing and duplicating workshop materials and handouts	$600 - $1,000
Evaluation forms and computer analyses	$600 - $1,000
Office supplies, telephone	$500
Meals (may be covered by registration fees)	$3.00 - $6.00/participant

While this budget indicates six-person months of commitment by professional staff, workshops can require even greater expenditures of time. Whatever the effort, funding can come from a variety of sources: private foundations, industry and/or government funding agencies such as NSF; contributed services (one university supported a director for 25% of her time for 12 months); or volunteer services (community resource or convention bureau volunteers).

In most cases, outside funding sources will not cover all personnel costs, and university or other sources will be needed to defray actual workshop costs. On one campus, the Dean of the College of Arts and Sciences provided a project coordinator and part-time secretary from his staff and their salaries were paid by the Dean's office. Additional funds were provided by each of the Colleges of Arts and Sciences, Engineering and Science, and the College of Life Science and Agriculture. These helped defray the cost of office supplies and a banquet. Departments may be willing to share in the costs of speakers if they agree to give departmental lectures in addition to participating in the workshop.



Registration fees can also help meet costs of meals or materials. Some planners feel that, if a participant has some financial investment in the workshop, she is less likely to be a "no-show." Registration fees have ranged from $2.00 to $15.00. Fees should be collected with the preregistration forms and a policy of "no refunds" indicated on the application. There should also be a mechanism for sponsoring economically disadvantaged participants or waiving the fee.

Corporations are a good source of support for your workshop. They can provide display materials and recruiting personnel to describe careers. They might cover the cost of meals for participants. They often agree to pay the expenses of their employees who participate in the programs. It is important to acknowledge corporate contributions on your program and other workshop publicity and to send copies of these to the company with your thank you letter.

Role of the Advisory Committee

Before deciding whether you want an Advisory Committee, examine the benefits and problems associated with this strategy. On the positive side, an Advisory Committee can help you clarify workshop goals, broaden your perspective, find speakers, and, most importantly, recruit participants. Your Advisory Committee should be comprised of key people within other colleges, universities, and industry who are ready and willing to help.

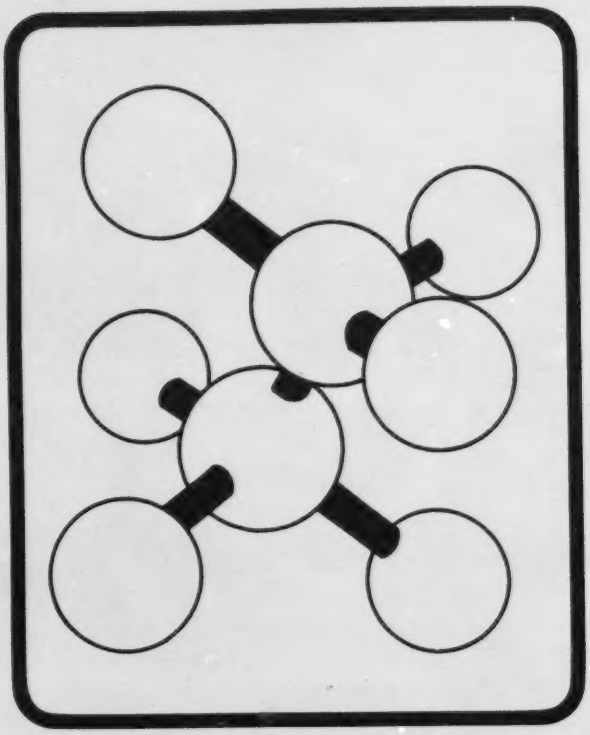
On the negative side, an Advisory Committee may offer advice you don't want to accept. Project directors who are inexperienced in managing groups might find interesting challenges in resolving problems suggested by the Advisory Committee. Past experience indicates that it is worth it, if you choose your Advisory Committee wisely. Remember, these are busy people and must be used efficiently. Don't burden them with numerous meetings. Call an initial meeting prior to the conference and a final meeting to assess the conference's impact and use letters and telephone calls to keep contact with them.

Specific tasks that an Advisory Committee can accomplish are: facilitating entrance into classes at other colleges and universities to recruit participants; securing appropriate speakers from industry and universities; developing brochures and working with the media; raising funds; and acting as hosts and facilitators in small-group sessions during the workshop.

Developing a Liaison Network

Some project directors set up a liaison network of faculty administrators in area colleges and universities for the specific task of recruiting students from their respective campuses. This group needs to be organized as soon as workshop goals and format are clarified. Since the turnout from each school *depends* on the liaison person, he or she is a crucial person.

Personal contacts and referrals can identify competent, willing, and influential persons on other campuses. Ask for suggestions from those who are not able to fulfill the responsibility, or from your Advisory Committee. Calls and letters to liaison people should clearly articulate workshop goals, target audiences, and specific responsibilities of the liaison persons. A meeting with, or visits to, liaison people will help you to distribute your brochures, posters,



press releases for student newspapers, and sample letters to faculty publicizing the workshop. Liaison people should be told to enlist faculty, women's center personnel, directors of minority and handicapped programs, and counselors in the recruitment process.

Maintain regular contact with liaison people to monitor their progress in disseminating workshop information. If possible, keep a record of applications received by school and department to give them feedback on the effectiveness of their efforts. Special strategies should be devised to ensure the recruitment of minority and handicapped students.

Include both your Advisory Committee members and liaison people on the program list of workshop sponsors and contributors. ●

4

Making Arrangements

Once your workshop date is chosen and the facilities selected, they cannot easily be changed. Substitutes can be located for speakers, panelists, and the luncheon menu, but changing the date or the location is virtually impossible—and both of these items are *critical* to the success of the workshop.

Choosing a Workshop Date

While successful workshops have been held on weekdays, most are planned for weekends during the academic year when speakers and participants are freer to attend. Consider all possible scheduling conflicts associated with your target audience. Is there a big football game that day or weekend? Is a major dance or other social activity scheduled for the evening before your event? Are there any special community events scheduled? Does your date occur during midterms, finals, or vacation breaks? (If you are recruiting from several schools, academic calendars probably differ.) Is the weather almost invariably miserable that time of the year? Or perhaps so beautiful that the temptation to go to the beach or forest cannot be resisted. Are any national and/or religious holidays in close proximity? Try to avoid them, if possible. Consideration of all these factors will aid you in selecting the best date for *your* workshop.

Selecting the Physical Arrangment

The availability and quality of facilities are likely to strongly influence the size of the workshop and/or sessions that are offered. You will probably need auditoriums, session rooms, luncheon facilities, and perhaps laboratories. Each needs to be accessible to the others. A central location appropriate for registering participants and providing information must be available. Necessary audio-visual equipment and the suitability of the rooms for the use of that equipment must be evaluated. In selecting facilities, consider the appropriateness of the setting itself to accomplish your objectives. Should you use an academic location, a public conference center, or a hotel or other commercial setting? It is best to reserve the necessary rooms as soon as you think you might have a workshop. You can cancel later, if your plans fall through.

Transportation can be a major issue and must be resolved early in the planning. Will participants have to travel long distances? Will you provide transportation or will they make their own individual arrangements? If it is essential to the success of the workshop that you provide the transportation, what form should it take and how costly will it be? Is transportation required *during* the workshop? If so, how will it be provided? Will presenters require transportation? Some presenters prefer to make all of their own arrangements while others want you to make them. At the minimum, you will need to find rooms for your presenters and send them directions from the airport to their hotels. *Everyone* should receive a map of the facilities and surrounding area plus directions to the workshop.

In addition to transportation, there is the problem of housing for both participants and presenters. Presenters coming long distances will be provided with lodging for the night before the workshop and meal allowances or per diem. Housing for workshop participants becomes important if your workshop lasts more than one day, or if a large number of participants will be traveling long distances. Find someplace for storing luggage and a lost-and-

found department, even for a one-day workshop.

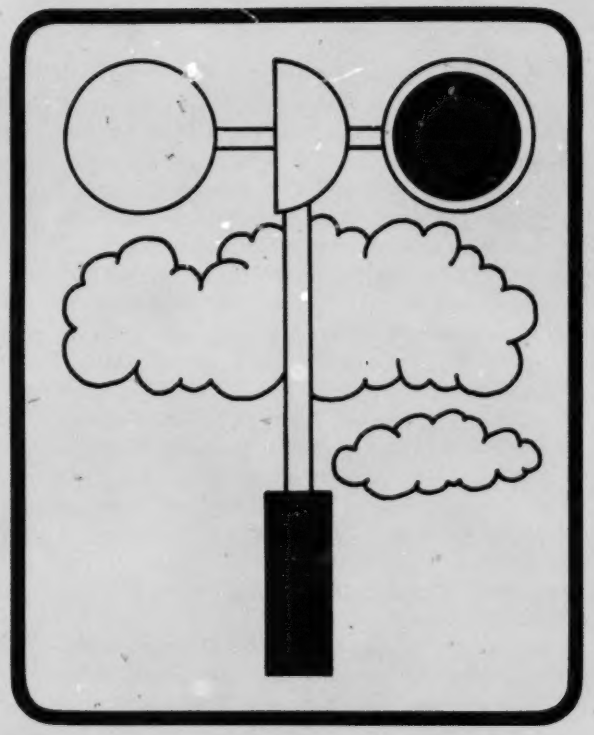
Housing Student Participants with Scientists

As an alternative to housing students in hotels or dorms, you might house them with women scientists. The opportunities for informal interaction, role modeling, and information on the diverse life styles of women scientists are tremendous. Typically, in a two-day workshop one or two students would eat dinner and spend an informal evening with a woman scientist, stay the night, and return to the workshop after breakfast. While this alternative is inexpensive, it is extremely time consuming and should only be undertaken if you budget enough time for recruiting host scientists. To recruit host scientists, call the lists of potential resource persons. Expect that a large number will not be interested in doing this. In order to obtain 62 women scientist hosts at the University of Colorado in Denver, approximately 240 women were called.

Make sure students understand the overnight component of the workshop, and find out if they need to bring sleeping bags. Try to match students and scientists in related fields, and let both students and scientists know whom they are housing and who is housing them. Workshop leaders who have lived through this process say that it is more than worth the effort involved in benefits for both students and women scientists.

Meals and Breaks

Breaking bread together brings people closer and encourages conversation and exchange of ideas. Participants and presenters meet informally during coffee breaks and meals and discuss matters of mutual interest on a one-to-one basis. The established woman scientist is suddenly very approachable and sympathetic. For these reasons, sufficient time should be allowed for coffee breaks and meals; arrangements with the catering services should be carefully planned so that these program elements go smoothly. Having one or more presenters sitting at each table and letting student participants know who is sitting where will allow them to select the person to eat with. Allow enough time so that table-hopping can occur. Valuable conversations are not limited to those between presenter and participant, but occur



among participants who have much to share with each other. Coffee breaks also help participants become acquainted and provide them with opportunities to form new friendships.

Childcare

Consider the advisability of providing baby-sitting arrangments. Check whether you have to take out insurance to cover this. If you provide childcare, state on your application that participants who request this service need to indicate this in advance and that only a limited number of places are available.

Parking

Arrange for parking on or near the campus. Suggest that participants car pool. Provide details on public transportation. Large conferences may require off-campus parking with arrangements for a shuttle bus to the conference site.

Field Trips

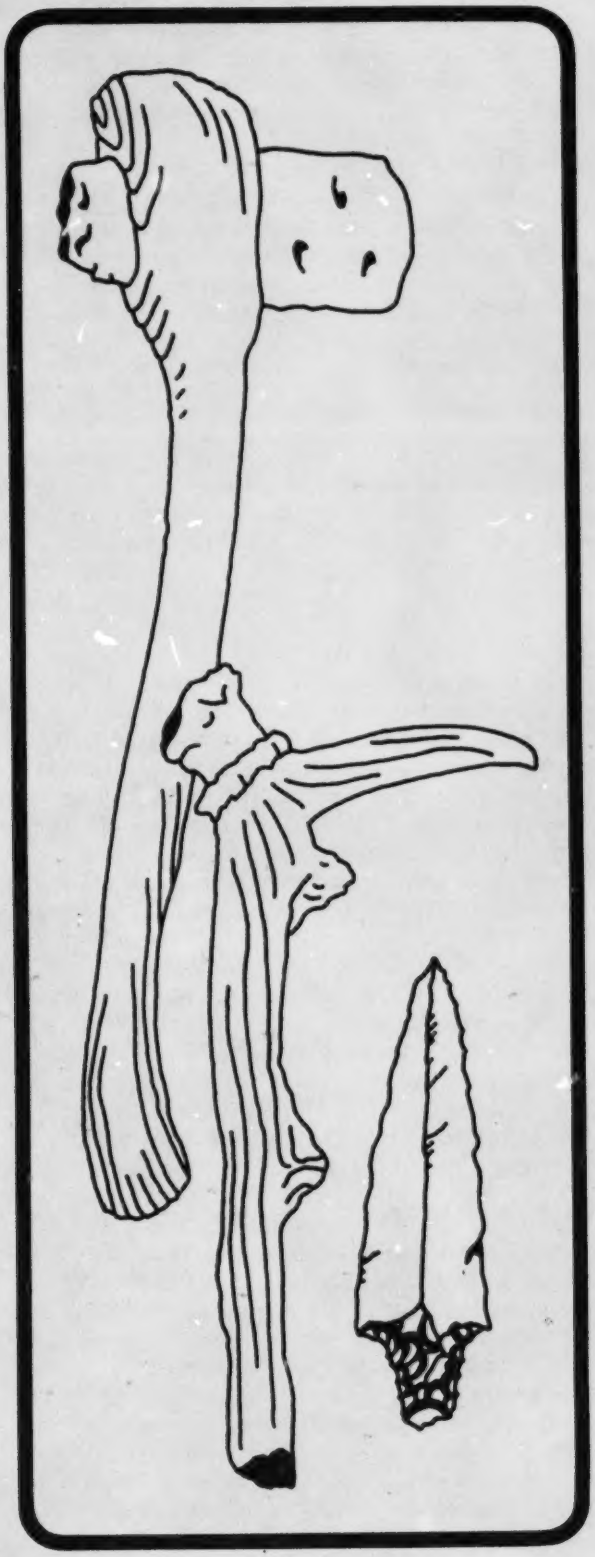
In longer workshops, field trips are frequently included because they increase participants' knowledge of career opportunities and enable them to talk to women scientists on the job. If they are far from the program site, these trips require large blocks of time. Therefore, the director must carefully weight the cost/benefit ratio. Will the time spent in transit be compensated for by a valuable experience at the destination? Is it worth two or three hours to see a women environmentalist test the impact of a nuclear waste on the temperature of the river? Could the topic be treated just as effectively in a panel discussion? Ask what the participants will see, and what other options are available, before deciding on field trips. In some circumstances they may well be worth the preparation and participation time.

Locked Doors

Because this is a common nightmare for many project directors, locked doors deserve mentioning. Prior to the workshop, find out who the security person is and where he or she can be reached in the event that, when you arrive on the day of the workshop, the doors have not been opened. If possible, obtain a passkey to all necessary rooms so that you or an assistant can unlock the doors. If this is not allowed, keep the security phone number with you at all times. Often, the large auditorium will be unlocked but the rooms for small-group sessions will not be. Be sure to check these rooms well in advance of the time they will be used.

Mopping Up

At the end of the workshop, see that the conference facilities are in reasonably good order, that trash is in the trash cans, and the doors are locked. Another level of mopping up consists of gracefully accomplishing all those personal touches that give both the presentors and yourself a sense of a job well done. Make certain that the presenters have transportation to the airport. If they are staying overnight, arrangements should be made to help them plan the rest of their stay. Thank you notes should be sent to all presenters, staff members, companies who participated or gave financial support, and university officials. A letter to the supervisor of the presenter or staff member, with a blind copy to that panelist, is appreciated.●



5

Identifying and Recruiting Presenters

Presenters will be chosen primarily from women scientists and engineers in academia, government, and industry, who represent diversity in age, ethnicity, lifestyle, and education attainment. Naturally, you will want to select presenters who are competent, personable, communicative, and sympathetic to women's issues, and you will want to use them as discussion leaders, panel members, keynote, luncheon, and closing speakers.

Strategies to identify, locate, and persuade such people to participate in the workshop are suggested.

- Use personal contacts and referrals from your Advisory Committee, liaison network, career services office, and your faculty. Compile these names and phone numbers on index cards.
- Call personnel departments, EEO coordinators, and affirmative action officers in corporations and government agencies. Explain your needs and request names of potential speakers.
- Write a newspaper article about your search for women scientists and engineers or interest a local journalist in the story.
- Call project directors who have conducted women in science workshops for recommended speakers. (See list of directors in the Appendix.)

Locating minority and handicapped women scientists and engineers has been difficult for some directors, and special efforts may have to be made.

- Contact minority studies programs, counseling centers, and affirmative action officers on campuses to find academic people.
- Call the affirmative action officers of research hospitals, laboratories, corporations, and government agencies.
- Ask all minority and/or handicapped women you locate if they know of other minority or handicapped women scientists.
- Consult the roster of minority and handicapped scientists published by The American Association for the Advancement of Science. (See Appendix for address.)

- Call the affirmative action officers of research hospitals, laboratories, corporations, and government agencies.
- Ask all minority and/or handicapped women you locate if they know of other minority or handicapped women scientists.
- Consult the roster of minority and handicapped scientists published by The American Association for the Advancement of Science. (See Appendix for address.)

In identifying effective people for your panels and discussions, it may be less important that your speakers are eminent than that they are lively, humorous, or extremely powerful in presenting their information. If you want someone prominent as a keynote speaker, you will have to contact her many months in advance of your workshop date. Pay close attention to your choice of a closing speaker since you will want to end the workshop on a strong, positive note.

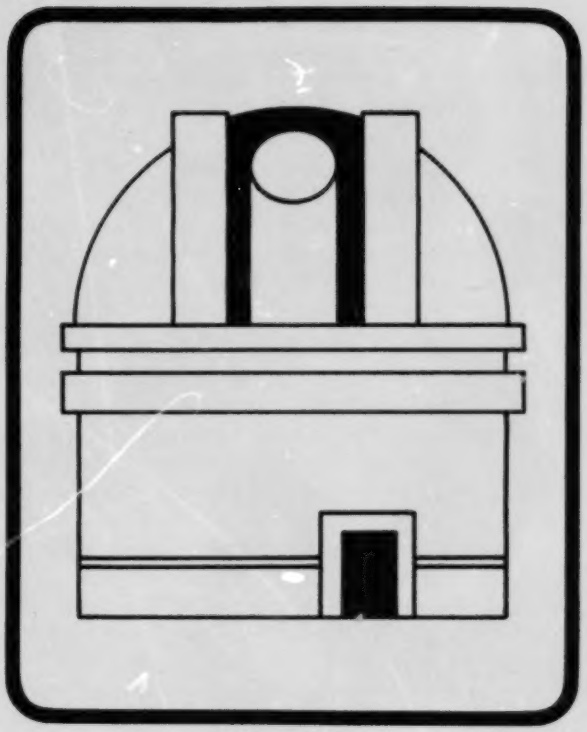
Project directors have reported that participants felt the presenters were too pro-feminist in their discussions or not militant enough. Be prepared to receive both comments in your evaluations. How much of a feminist orientation is conveyed in your workshop depends upon the speakers you select, the audience you are addressing, and the feelings of those who plan the workshop with you.

While Women in Science Career Workshops are directed toward women participants, the question of whether to involve men as speakers, in large- or small-group sessions, has been handled differently in past workshops. Many workshop planners feel that the sense of community and collective power that is experienced in an all-female workshop justifies excluding men from participating prominently in the workshops. Other planners feel that, since scientific leadership is currently in the hands of men, including them in the program will increase their awareness of the talents and seriousness of women preparing for scientific careers, and will let participants know that men can be supportive to women in science. A third approach is to include men in the planning sessions of the workshop (often on an Advisory Committee), which gives them an investment in the success of the workshop, but to use only women as role models. Decisions on involving men will be based upon the community and institution of which you are a part, the speakers who are available, and the goals of your workshop.

Once you have located a presenter, contact her as soon as possible. Send confirmation letters to those who accept your invitation to speak with brochures (when available) and a reiteration of the financial details that have been agreed upon. Your confirmation letter should clearly state workshop goals and what the presenters will be expected to do, who the target audience is, and so forth. Include your phone number in case they have additional questions. Send directions to the location and a map of the facilities one month before the workshop.

Follow-up calls should be made after two weeks, if confirmation forms are not returned. You may give them the option of calling the information rather than writing. Confirmation forms from presenters that include title, organization, highest degree obtained, and special interests may be used to prepare a handout for participants of biographies of presenters.

Plan travel arrangements far in advance so hotel reservations are available. Arrange for introduction of speakers on the day of the workshop. The project director might introduce the keynote speaker, and faculty members, deans, graduate students, Advisory Committee members, or liaison people might introduce presenters at panel and small-group discussions.



Remember to provide name tags and workshop packets (if provided for the students) for your presenters.

Trouble Spots

Expect a few cancellations due to illness or unexpected work commitments, and keep a list of people willing to be "substitute" presenters, or ask enough presenters so that, if one drops out, you still have a sufficient number. Advisory Committee members might fill in as presenters or bow out if some women scientists bring friends who want to be role models. Have several staff members available to check whether all presenters show up for their sessions and to deal with the situation if they don't.

Sometimes personality clashes occur between students and presenters, most often at mealtimes in heated discussions. A "circulation" time after lunch that allows students to go to other tables reduces frustration if this occurs.

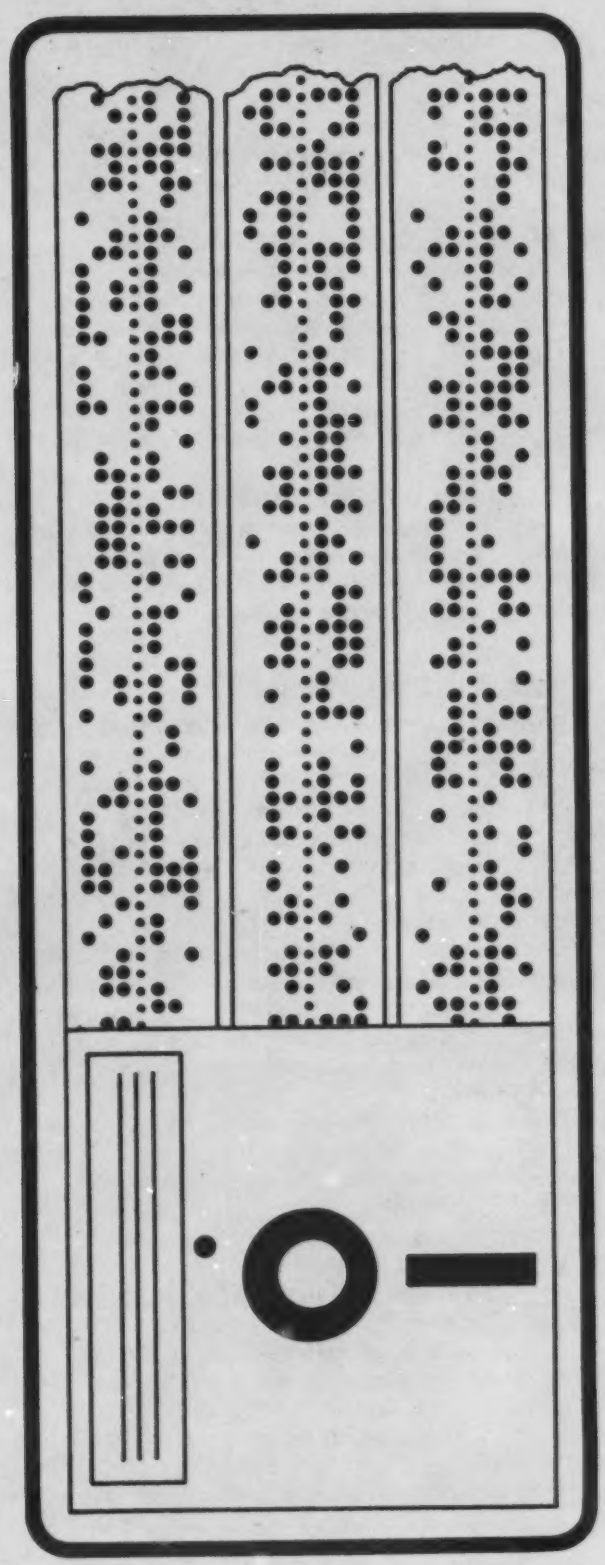
Assisting Presenters

At least one university offered a formal training session for local workshop presenters. During the session, a workshop format was used to develop presentation skills and to clarify topics covered by each presenter. The training sessions permitted the workshop leader to assess each presenter's style and to offer individual suggestions for improvement. This knowledge allowed the project director to then schedule presenters in a setting that enhanced their style (e.g., soft-spoken women were coached to use a traveling mike or were placed in smaller rooms where their voices would project).

Other workshop leaders have arranged for a potluck or social activity to gather local presenters together to discuss questions and effective communication strategies. The more information you provide your presenters, the better job they can do.

One project director suggested that, if it is not possible to meet with presenters prior to the conference, the booklet, "Science Career Exploration for Women," published by the National Science Teachers Association, would have useful information for presenters. (See Appendix.)

If the presenters can spend the whole day at the workshop, both they and the participants feel more satisfied. One way to keep your presenters all day is to offer a social hour after the workshop—just for them and staff members to relax and meet each other.●



6

Recruiting Participants

Will your workshop be open to all interested people, or will you select particular groups or people to invite and, if so, what criteria will you use? For example, do you want to recruit participants who have a commitment to a science career or are you interested in undecided women as well? These are among the recruitment decisions you will make.

Recruitment of students on the host campus can be accomplished through (1) direct mailing of applications and descriptive brochures to each student in the appropriate target audience; (2) faculty announcements of the workshop in classes and handouts of the application forms; (3) meetings of the Advisory Committee with selected students to describe the program and hand out application materials; (4) announcement of the program in the campus and community news media (newspaper, radio, television); (5) display of posters in strategic locations that describe the program; and (6) enlistment of enthusiastic students who have participated in similar or prior workshops to publicize the event.

Timing of the recruitment publicity and follow-up of the applicants prior to the workshop is important. Recruitment should begin well in advance of the program. Many project directors confirm participants' applications two weeks prior to the program, either by mail or telephone.

A percentage of people who apply will not show up for the workshop. Project directors have indicated a range from 5% to 40% of "no shows." To insure capacity attendance, more applications should be accepted than the number actually expected to participate.

Recruitment of students on other campuses is best done by liaison persons at those institutions. They will be expected to use recruiting methods similar to those used by the host campus and to coordinate transportation to the host institution. More details about recruitment can be found in the following section, in which publicity is discussed.

If your audience is not composed of undergraduate students you will have to use different methods of recruitment. High school students are best recruited by their math or science teachers. Several brochures with a cover letter describing the workshop should be sent to department chairpersons in school districts, as well as to individual classroom teachers.

Post-baccalaureate women are perhaps the most difficult to reach. You will have to use a combination of the media (press releases, public service announcements, television talk shows, advertisements), mailings to members of professional organizations such as the Association for Women in Science or the Society of Women Engineers, and alumni mailing lists. In Lantz and Moore's *Planning for Reentry Programs: Information from the Projects,** several good suggestions are offered for recruiting post-baccalaureate women.

> **How should I recruit participants?**
>
> One first step is to discuss recruiting ideas with your institution's public relations office, if one exists, and the continuing education department, which is experienced in appealing to adults. Another early consideration is to allow ample time for getting the word out about your project. It is easy to underestimate the time needed for this phase.

* Alma Lantz and Sara Moore, *Planning for Reentry Programs*. Denver, CO: Denver Research Institute, University of Denver, March 1980.

Past projects varied in design and success of recruitment strategies. Certain methods worked well for some institutions, but not for others. For example, small women's colleges fared well with alumni mailings, while large coed institutions had better luck with advertisements in local newspapers and media. If your institution is in a medium-sized city, you can place press releases with local media to good effect. In large cities, you will do well to spend what is necessary to buy advertising. Consult past project directors at institutions most similar to yours for ideas.

How Participants Learned of Past Career Facilitation Projects

	Percent
Newspaper Article	28
Through Friend	21
Direct Mailings	16
Newspaper Ad	15
Alumni News	12
Magazine	3
School Bulletin Board	3
Radio	1
Other	1

A successful recruiting tactic for several projects was to contact male scientists' wives. Half of American University's participants were married to men employed in the sciences. Another source of participants is women science teachers, who represent a traditional field of employment for women in science. Contacting employers has *not* yielded many participants in past projects.

It is important to use every avenue of publicity feasible. Each will yield a few participants, and one alone will not get the job done. A final point to consider is your project brochure, which need not be slickly packaged, but must contain detailed information to generate interest in the project.

The Application Brochure

Plan to print a large number of application brochures, whatever audience you are trying to reach. Some workshop directors have a return rate of one applicant per 10 brochures; others have one applicant per 200 brochures. Your budget will largely determine the number you are able to print.

The information on the brochure should include the following: workshop name, date, and location; host institution; goals; target audience; criteria for selection of participants; directions for reaching the campus (including a map, if possible), building and room numbers; and registration deadline. While it is possible to use several flyers, one brochure that includes an application form, schedule of the workshop activities; and conference sponsors is effective for both recruitment and publicity. If the application form includes all the demographic information that you will want to collect from your participants, you will not have to administer a pre-conference questionnaire on the day of the conference.

Many good application forms have been developed for Women in Science conferences. Several are reproduced in the Appendix A for your information. ●

7

Generating Publicity

Good publicity will help ensure the success of your workshop. In addition, publicity can bring you, your institution, and your program visibility in the community and may serve to raise the consciousness of faculty, staff, and the general public about the issues concerning women in science. Publicity can take the form of newspaper articles, TV coverage, radio announcements, campus news articles, and notices in trade journals and other publications.

Working with your campus information office will help generate a good press release. Send the release to key TV and newspaper columnists approximately three weeks before the workshop. You or your information officer should make a follow-up call one week before your program. Be sure to include public service announcements for radio and TV in your media campaign.

If your campus does not have a news service, determine the appropriate person to contact at local TV stations, radio stations, and at the newspaper(s). It is best to seek out those who are interested and concerned with women's issues since it is likely they will put more effort into developing a good story.

When registrations are low and you are unsure of the publicity, have advertisements ready to place in local papers. Try to have these placed in a frequently read section of the newspaper. Advertisements in campus newspapers are relatively inexpensive and can be very effective in reaching college audiences.

Posters can also be displayed in strategic locations—libraries, community centers, dormitories, etc. Special articles or advertisements can be placed in minority newspapers, if you are trying to increase the attendance of a special target group. Strategies that can help get your articles published include featuring your minority role model and publishing the article in Spanish when trying to attract a Spanish or Mexican American population.

Industry can assist you by including your news release in their newsletters. This may help you recruit co-op students for college level workshops, as well as participants for post-baccalaureate workshops.

Publicity on Workshop Day

Publicity the day of the workshop does not help registrations, but can accomplish the "visibility" goals discussed previously. Once again, timely, well-written notices must be sent followed by personal contacts with media people. Media coverage is never guaranteed, but if you have done your homework, you can relax and just hope that another major news story doesn't break on the day of your workshop.

Prepare a news packet ahead of time to give to media people who attend the workshop. You can also send a packet to them one week before the workshop. The packet should include:

- Workshop date, title, time, location, and sponsoring organization.
- Statement of the goals and objectives of the workshop and description of your target audience. Include a copy of your descriptive brochure and a program of the day.
- Background information on some of your presenters, particularly any featured speakers. Include vitae for these people and black and white glossy photos.
- Name and phone number of contact person for further information.

Have news service personnel from campus on hand to greet and assist media personnel. Arrange for rooms for news personnel to interview any featured speakers. If you have a

"superstar" speaker, arrange for a news conference.

Invite campus newspaper reporters, especially those from institutions that send presenters and/or participants. Alternatively, supply this information to these institutions, featuring their faculty and/or students.

Find journalism students or interested people who will record events or happenings in each individual session. Later, all these reports can be combined into a description of the entire workshop. In addition to having a written record, hire one or several photographers for the day. Be sure the photographers are given a program and mark the sessions to be covered. You will find many uses for these photographs.

If your campus has portable videotaping equipment, videotape segments of the program, featuring some speakers and short interviews with participants.

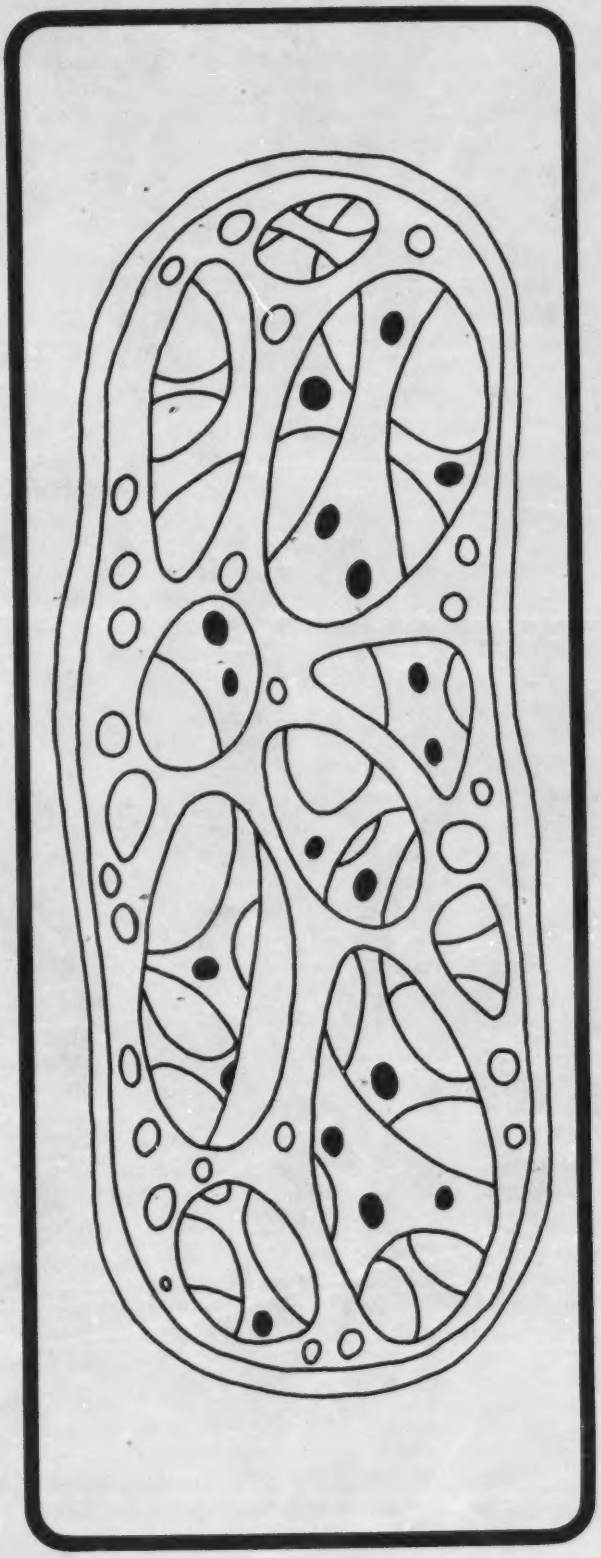
If career exhibits are set up by various industries, include these in the photographs. Alert the public relations department of the industries, since they might include the story and photos in their newsletter.

Invite all administrators on your campus to the workshop. Issue the invitation in advance, but remind them a day or so before the workshop.

Publicity After the Workshop

Send a synopsis of the workshop to your alumni office and include several photos. Send the same information to people requesting information about the workshop and to your Dean or Chief Executive Officer of your campus. The synopsis will also be helpful in preparing the final report.

Think about writing your own article about the workshop for a professional journal or popular press. ●



8

Collecting Resource Materials and Handouts

Many workshop planners find it useful to provide career information in the form of booklets, packets, or one-page flyers. Others have decided that the program of the day and interaction with women scientists provide sufficient information for participants.

Several decisions should be made concerning the identification, selection, and compilation of resource material.

- What is the significance of the career information you intend to provide? Will it offset the amount of staff time required to assemble the information?
- What is the most appropriate information for your target audience?
- How can you locate suitable information?
- Do you have money to purchase materials? Can you find high quality materials that are free or donated?
- Should you develop your own materials?

Deciding to Provide Materials

Career materials and information about scholarships, fellowships, and other types of financial support can provide participants with additional resources, people to contact, and programs to investigate, *if* they are carefully identified and clearly presented.

A substantial amount of time may be needed to accomplish this task, however, and each project director will have to take into consideration the amount of time she or her staff has available to devote to materials and handouts.

Several sources of information compiled by project directors are listed in the Appendix.

Targeting Information to Your Audience

If you are unsure whether the information you want to use is relevant to your audience, ask a sample of students in the target age group to review the materials. Contact your campus career placement office and women's career center for suggestions of good materials.

Be selective. It is better to provide participants with a few, well-chosen items they will read than to overload them with a packet of questionable value.

Previous experience indicates that younger students (high school, undergraduate women) are interested in career profiles of women working in science and engineering, descriptions of a typical day on the job, and the educational requirements necessary for the appropriate college degrees.

Upperclass and graduate students are more interested in specific employment opportunities. They want to know, "What can I do with a degree in . . .?" They are also interested in employment data (growing fields, salary ranges), professional advancement and mobility, and financial aid for graduate training.

A few career materials cover both of these interests, but most of them focus at one level or the other, and you will want to make your choices based upon the participants' educational status.

Locating Suitable Materials

In addition to the lists provided in the Appendix, local businesses and industries can provide you with career information. They will often supply you with enough copies for each participant. If you obtain career material from private industry, try and have several companies represented in your information packet, so that you are not promoting one company to the exclusion of others. You can also request names of scientific companies who

recruit at your institution from your campus employment office, and obtain materials in this way.

If your area does not include many industries, write a letter to the public affairs or community relations officer at the corporate headquarters of several major industries that employ scientists and engineers. Describe the goals of your workshop and the audience you will reach. Ask them to send you a sample of materials that they could make available in sufficient quantities. After you have reviewed these materials, you will find at least a few that will be suitable for your purposes.

Don't forget to include information from all institutions in your area, such as department brochures, admissions policies, and counseling services. Also, write to professional organizations such as the American Chemical Society and the Society of Women Engineers for materials.

Purchasing Materials

Often, good materials are not free, and you may not have budgeted for this item. There are several ways to obtain additional funds for this purpose.

If you charge a participant fee to attend the conference, you may include some monies in the fee to cover cost of materials. For example, if you charge $4.00 per participant, and your lunch is covered by other costs, or donated by industry, you can then use that registration fee to cover the cost of the materials.

Even free materials may cost something if you reproduce them. *Be sure you have obtained permission to reproduce any materials from the author or journal you have chosen.* To ignore this is to run afoul of the U.S. Copyright laws.

Some local industry may wish to make an in-kind contribution to your conference by offering to take on your printing costs in exchange for being a co-sponsor of the conference. This is often easier to secure than a donation of funds.

Many conferences have used only materials that were free and these have been excellent, so if you cannot find funds to purchase materials, don't worry about it.

Developing Your Own Materials

Several project directors decided that the best resources for their participants would be materials they developed. These included booklets or flyers listing brief biographies of the women role models, surveys of local employers or technical people (particularly important for those about to enter or re-enter employment), listing of relevant local women's organizations, annotated bibliographies of interesting books and articles, counseling and assessment forms to aid participants in defining their career goals, and financial aid and scholarship information.

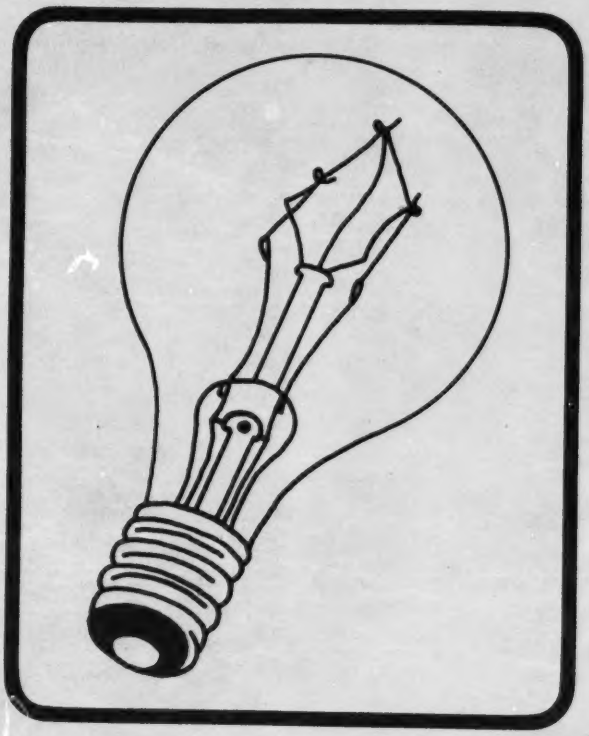
These booklets may take considerable time and often require additional funds. On the other hand, they provide participants with a resource packet specifically tailored to their needs and, as such, are extremely valuable.

If you choose to prepare local materials, you will often find that you have acquired a wealth of information—you have become, in fact, a network yourself. This may be one of the most persuasive reasons for developing your own materials.

Once your materials have been collected, decide on a convenient way to present them: on a display table or in packets given to participants on the day of the conference are the preferred forms. If you decide on packets, be sure you prepare them well in advance of the workshop day. Devote a few minutes at the beginning of the workshop to describe what materials are in the packet and how they might be used. ●

9

Doing the Workshop



While unexpected crises may occur, the workshop day usually goes smoothly. Even if it doesn't, conference participants usually are not aware of problems. A number of potential trouble spots are identified and suggestions given to help you avoid them.

Arrive at least one hour before workshop participants are scheduled to pick up their materials. Bring five or six assistants with you. Make certain that a responsible person employed by the facilities is there at the same time, and that he or she has keys and access to equipment.

If signs are not posted the night before, do it early in the morning. Include signs that indicate directions to all major events, workshop rooms, registration, bathrooms, and telephones. The more signs you have, the fewer questions will be asked of your staff.

If registration tables were not set up earlier, do that now. Be certain to have chairs for registrars. At least one person should be available at the registration area throughout the first few hours to handle late registrants and presenters. Make sure that your registrars have agreed upon a workable process to follow. The simplest way is to divide sections of the alphabet. Instead of each registrar dealing with special problems, assign a specific staff person to do this so that the registration process can proceed smoothly. Indicate "Problem Table" with a big sign. Ask one staff person to help presenters with name tags, directions, meal tickets, audio-visual equipment, and workshop packets.

Have a number of items available at the registration desk such as masking tape, cellophane tape, paper, pens, pencils, thumbtacks, change, straight pins, and extra copies of the program.

If you have a pre-conference evaluation form, be sure participants complete it before the opening session, and that it is collected before participants move on to their first workshop.

Check that all doors are unlocked, rooms have been arranged as requested, and any necessary equipment (e.g., audiovisual machines and extension cords) has been provided. If you have reserved extra equipment to replace any that may break down, find out where it is.

Start the workshop on time. During the morning session(s), check on your luncheon arrangements. Are the facilities arranged

correctly? Is the menu right? Are the people scheduled to serve it? If you have a luncheon speaker, is the microphone at the podium (or head table) set up? Do you have signs directing panelists and participants to the luncheon area? Did you specify the final estimated number of lunches?

After lunch, check on your social hour arrangements. Is the room ready? Are people assigned to serve refreshments? Do all presenters know where the meeting will take place?

If you are collecting post-workshop evaluation forms, assign people to distribute and collect these forms.

Clearly, you won't be able to see much of your own workshop, but your attention to details during the day will be a critical factor in providing a well organized workshop.

A sample logistics check list that one project director devised provides useful information.

Work Schedule for the Day of the Conference*

8:00 a.m.	Get coffee and donuts, etc. from Dining Hall and bring over to 114 SSS - Sara, Linda, Felicity - there will be two tables outside 114 (Lou will set up) for Sara and Linda to serve. Sara and Linda put out coffee and serve it. Clean-up: Lou and Linda Give Linda a meal card and schedule.
8:00 a.m.	Lou will set up the tables for registration. Give Rochelle small table from Dean's office. Cassandra and Connie will show Jill and Lee how to do Registration. Cassandra will be available for their questions and problems. Cassandra will set up table with pamphlets, etc., in hallway (use table from office).
8:00 a.m.	Felicity and Gary set up chairs in panel rooms.
10:00-11:45	Sara will be at registration table to do late registration.
11:00 a.m.	Felicity and Gary collect chairs and put back in storage room and then go over to Commons (by 11:30) to set up for lunch.
11:45 a.m.	Sara will take remaining registration packets to Cassandra in Commons.
Lunch	Cassandra will have a table for late registration and people who want to come to the lunch but have no lunch tickets. Gary will have a table set up for Sara to collect tickets - after lunch Sara will take the tickets with her to her room.
12:00 p.m.	Gary and Sara put bunch of unmarked index cards on each lunch table.**
12:15 p.m.	Gary and Sara check people in for lunch. Cassandra will be in the office until 5:00 when she will lock up.
1:45 p.m.	Felicity and Mark meet at room 14 WLH and set up tables.
2:00 p.m.	Felicity and Mark show Dining Hall people tables - then set up chairs in discussion rooms as indicated.
4:50 p.m.	F. and M. pick up evaluation questionnaires from discussion moderators in room indicated.
5:00 p.m.	F. and M. collect all chairs and tables and lock in storage room. ●

*Adapted from "New Directions for Women's Conference," Yale University, May 5, 1977.

**For the luncheon address, Dr. Margaret Mead asked the audience to write their questions on index cards, which were collected and brought to her to be answered—an excellent system for large groups.

10

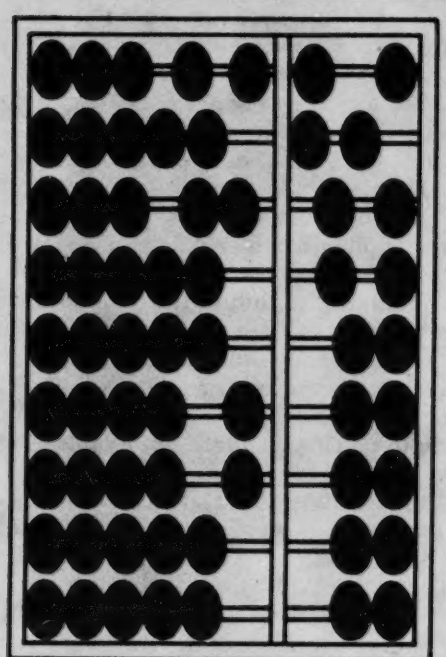
Conducting the Evaluation

Evaluation can be an interesting learning experience or a formidable and meaningless exercise, depending upon your approach. First, what are your goals for evaluation? If you have received funds for the workshop, does your donor have evaluation goals? The evaluation goals of the NSF Women in Science Workshop can be summarized as follows:

- Since the Women in Science Program is experimental, it is necessary to try to measure what works well and what doesn't. Are the workshops accomplishing anything and, if so, what? Answers to these questions may be able to facilitate the recruitment of more women into science and engineering courses.
- As a governmental agency, NSF must evaluate its programs to justify continued (and increased) funding. Demonstrating that these projects work justifies continued funding for women in science projects.
- For the grantee, an evaluation of various workshop components (recruitment, presenters, activities, etc.) can determine the strengths and weaknesses of the project, so that improvements can be made in future activities.

It would be useful to evaluate all of the components of the workshop, and to address a few questions in your survey to the following issues:

- Was your recruitment effort effective? Did you reach your target audience? What obstacles did you encounter?
- What were the socioeconomic and ethnic backgrounds of your participants?
- What was the educational level of your participants and to what degree levels do they aspire?
- What was the ethnic and employment diversity of your presenters?
- Which workshop components did participants rate most positively and most negatively?
- What was the impact of the workshop on the host institution? On the presenters? On the community? and on the project director and her/his associates, as well as the Advisory Committee and liaison network?
- What was the impact of the workshop on participants' choice of college major, graduate school plans, or career goals?
- What ongoing or new activities do participants and presenters recommend?



Specific Objectives

Evaluation of recruitment involves determining to what extent your publicity and recruitment efforts aided you in obtaining the desired participants and presenters. For example, suppose one of your primary objectives was to obtain a wide geographic representation of participants. When the workshop is over, how do you know whether you reached that objective? Clearly, you must ask each applicant to note their school or home on the application form, and then to answer the same question again at the actual workshop, in the event you have a number of last-minute applicants.

If your publicity plan included newspaper ads, posters, and public service announcements on the radio, which of these was the most cost-effective to use? Again, you can ask applicants and participants how they found out about the workshop on the application form or at the time of the workshop.

Workshop Effectiveness

In measuring the effectiveness of the program activities, look at the types of sessions (plenary or small groups), opportunities for social interaction, meals and coffee breaks, field trips, and other special activities.

A common method is to list each program element and ask participants to rate it on a five- or seven-point scale. In some cases, it may be appropriate to rate both content and method of presentation. Leave space for participants to comment on the program. Other questions might include: were there issues related to careers in science that were not addressed by any of the workshop sessions? Was the program too sophisticated or did it "talk down" to participants? Would the participants recommend a similar program to their friends?

More difficult to evaluate is the effect of the program on the individual's career plans. A questionnaire about career plans completed at registration and at the close of the workshop is one way to do this. It might, for example, show that the workshop encouraged participants to move from a single discipline focus to a multi- or cross-disciplinary focus, from a traditional career objective to a very contemporary one. Or you might ask participants at the closing session whether they envision changing their career plans as a result of the workshop activities. If possible, a six-month or twelve-month follow-up survey would indicate the

enduring effects of the program. These follow-ups will not bring 100% return, so one must assess whether the responses are too highly self-selected to be generalizable.

Evaluations by presenters should also be considered. Suggested questions to ask them are:

- What is your overall assessment of the workshop?
- What was most and least beneficial to you?
- What questions or issues were raised that you feel need more attention?
- Would you like to be contacted again for future women in science activities? If so, please leave your name, address, and phone number on the attached card.

A variety of evaluation instruments have been developed by project directors. Several pre- and post-questionnaires are reproduced in Appendix D to assist you in developing your own survey. Once again, it is essential to involve your evaluator at a very early stage. This person can then advise you about the use of open-ended questions versus multiple-choice items, structuring a questionnaire for easy data processing, and related issues. ●

11

Developing Ongoing and New Activities

Bringing together people who are interested in and committed to women in science will always generate enthusiasm for spinoff activities. These may be accomplished for very little money, or they may require a search for funding. Soon after the workshop, hold a brainstorming session of interested people who want to develop projects, whether or not funding is available. This may stimulate a search for funds that will help to realize the projects.

Former project directors have reported a number of ongoing or new activities that resulted from a Women in Science workshop. For some, the workshop was a catalyst to establish a new position on campus to recruit and retain qualified women in science and engineering; others have developed materials, networks, courses, and outreach programs for precollege students.

Institutional Changes

Ruth Ann Cade at the University of Southern Mississippi reports that "for the first time (after many years of requests), the University has agreed to set up a position for a woman to coordinate women's programs on campus." She goes on to say, "departments which offer services to women students have formed a cohesive group and now cooperate with each other to provide all services. This was brought about by their participation in the workshop during which they learned about the activities of other university departments."

Patricia Stringer writes that, at Emory University, a Women's Science Career Advisor was appointed and will become a permanent position. "The purpose of the appointment was to give women students an opportunity to talk with and be advised by a woman scientist at Emory University who could serve as a role model to women students."

The University of Arizona has been extremely active in developing a university-wide program in women in science with the NSF workshop as the initial impetus. Myra Dinnerstein and Linda Meade-Tollin describe the formation of a new committee: "In recognition of the importance of these activities (stimulated by three NSF workshops), the President of University appointed the Women in Science and Engineering Advisory Board in Spring 1979 . . . WISE Board activities include preparing and disseminating information on academic curricula and career opportunities in science and engineering, bringing students into contact with women scientists and engineers, and establishing special educational programs in math and career planning." WISE has developed a slide-tape presentation for high school students and a handbook for high school women entering the university, as well as collaborating with an industry-education consortium to develop work experience programs and field trips to industry for high school students.

New Materials

Doris Simonis is developing an *Iowa Women in Science Directory* from the Women in Science workshop at the University of Iowa. "I am currently compiling information and responses received in answer to the first thousand letters mailed to women scientists in industry, academe, and government." The Directory will be provided to high school, junior college, and university teachers and counselors. "The women themselves," she writes," are also eager for copies so that they can locate others with similar interests. I foresee this Directory will also help us start developing networks and

more regular contacts with women of similar interests. Most of us are 'THE only woman' in the department, laboratory, etc., and we need some medium of exchanging insights, opportunities, and experiences. We feel a need to develop an organization to continue the mutual support that was such a boost during the workshop itself."

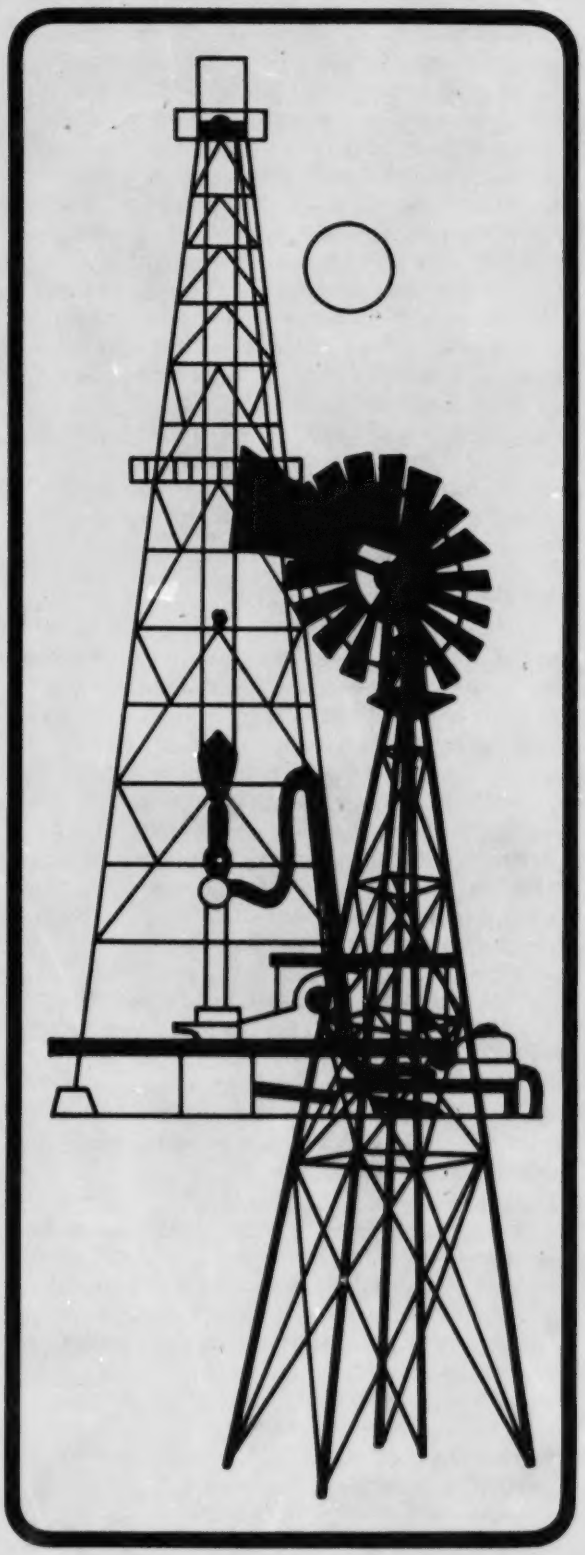
Christine Cremer at the Lawrence Hall of Science (University of California, Berkeley) developed a *Women Moving Up Resource Directory* for a 1978 Women in Science workshop. Follow-up surveys of conference participants indicated that, seven months later, 46% of the respondents were still using the Directory. Funding was obtained from IBM and Hewlett-Packard to revise and expand the publication so that it would be more useful for a wider audience. The new edition profiles twenty large employers of scientific and technical graduates and provides information on entry-level positions, on-the-job training, and recruitment for managerial positions. Other chapters detail information on educational programs that prepare one for employment in scientific companies; descriptions of local women's groups and career assistance agencies, as well as local and national professional organizations for scientists and engineers.

Wanda Sterner at Cerritos College videotaped the sessions from her workshop in 1978 and reports that the tapes have been used on the average of twice weekly since that time. They are also used by women's career classes, by students referred by the Women's Center, and by work-experience students in the college.

Ann Benham, University of Texas at Arlington, feels it is important to establish a Women in Science headquarters, "even if it is a small room in a science building." She developed a science career corner where booklets, audio-visual materials, videotapes, and career materials are available for student use. She says that this library of materials "has served to stimulate and encourage women students to seek higher goals, and work toward upper-level positions."

Projects and Programs

Carol Sauers at Douglass College, Rutgers University, received an internal grant to develop a course for freshmen with science career aspirations whose background in chem-



istry and mathematics is weak. Some of the students enrolling will be from inner city high schools.

The Women in Science workshop held on Pittsburg State College campus was designed for women from the two-year colleges in the area. As an ongoing project, Helen Kriegsman is assisting the two-year colleges in conducting their own science career workshops to include students from the junior and senior high schools in the community.

An analysis of data from the University of Wisconsin-Stevens Point high school conference held that, while counselors were no longer discouraging bright women students from pursuing scientific careers, they were rarely *suggesting* the pursuit of such careers to students who had not independently decided upon them. Toby Block reports, further, "Nor do they make average students aware that there are scientific careers that are open to those who are not honor students." Consequently, a follow-up activity at Stevens Point will be a conference for high school counselors and college advisors that will present information on the current job market and focus on attitudes of students, teachers, and prospective employers toward women working as scientists.

Perceiving a need to provide counseling and career information to women as family members, the Lawrence Hall of Science is establishing a Center for Careers in Science and Technology that will focus on increasing access of girls and women to career information in the sciences. Family career counseling and Math for Parents are among the special programs to be developed.

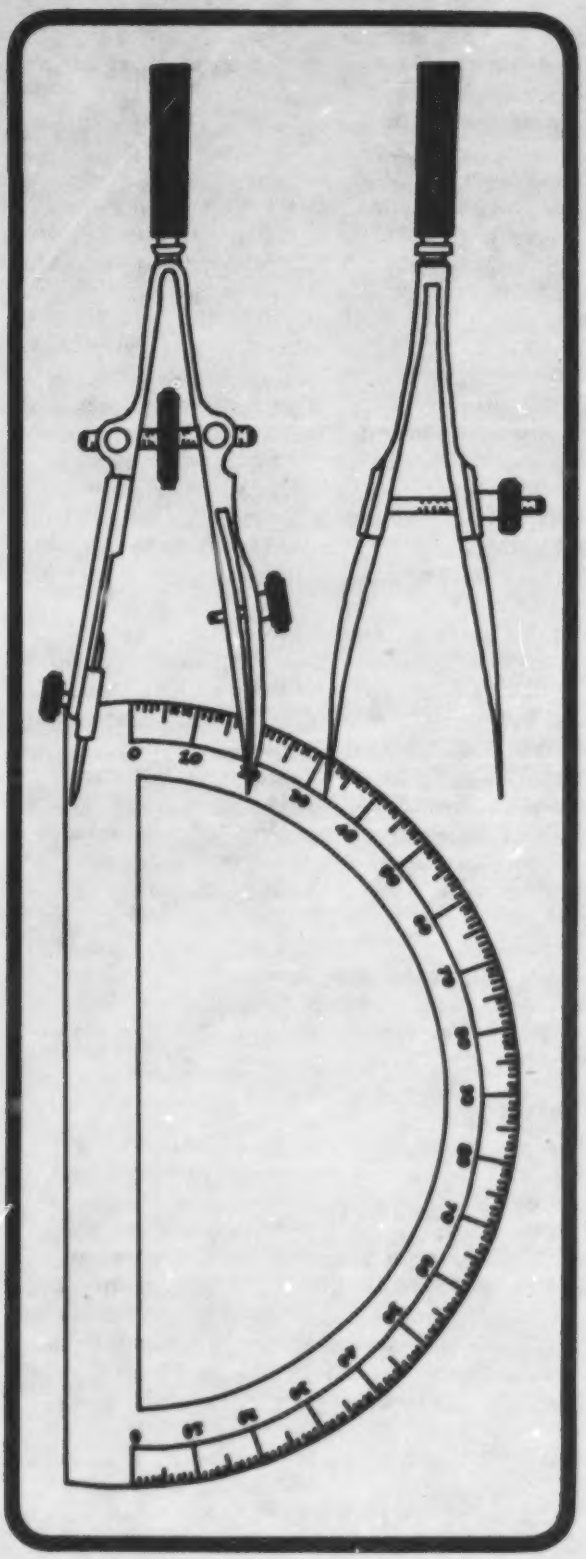
Networks

A new expanded network for women scientists and engineers seems to be a natural outcome of the Women in Science workshops. At the University of Dayton, a post-baccalaureate conference was followed by the development of an "old girls' network" involving workshop participants and designed to help women scientists make transitions in times of employment or career changes. Carol Shaw and Nancy Cherry, Co-Directors of the workshop, felt it was important that the network not be viewed as a project specific to the University of Dayton, but that it represent a wide group of women in science. Thus, they are developing a core group of network members who can carry the network beyond the confines of the university. The group consists of members of the workshop advisory committee and are drawn from industry, government, and higher education institutions.

Research Grants

Henrie Turner of Morris Brown College received a three-year research grant from the National Institute of Education to examine "Factors influencing persistence and achievement in the sciences and health professions by black high school and college women." This research project was generated out of the questionnaires that were administered to workshop participants in the Women in Science conference. Further, she reports that "we plan to become involved in the establishment of a Minority Women in Science Network."

It is clear from the above that there is no limit to the number of new ideas you can imagine and develop once you begin to seek ways to increase the participation of women in science. We hope that your efforts are well rewarded and your satisfactions lasting. ●



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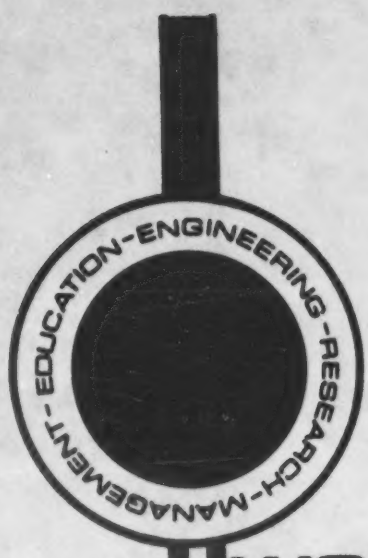


WOMEN + SCIENCES CAREER WORKSHOP

9:00 a.m. – 4:00 p.m.
November 11, 1979
At
•ST. JOSEPH ACADEMY

9:00 a.m. – 4:00 p.m.
November 17, 1979
At
•NOTRE DAME COLLEGE

Sponsored by: NOTRE DAME COLLEGE

Supported by: NATIONAL SCIENCE FOUNDATION

What's the difference between a chemist and a chemical engineer?

Do I have to take physics if I want a career in biology?

Is it possible to have a career in science and raise a family?

If I haven't decided on a career what should I take my first year in college?

I like math and science but I don't want to work in a lab so what job possibilities are there for me?

If you are a Sophomore, Junior, or Senior in High School interested in the answers to these and other questions on careers, you are invited to participate in either of two all day workshops:

WOMEN IN THE SCIENCES CAREER WORKSHOPS

Free programs supported by:

THE NATIONAL SCIENCE FOUNDATION

sponsored by:

NOTRE DAME COLLEGE OF OHIO

WEST SIDE
ST. JOSEPH ACADEMY
3430 Rocky River Drive
Cleveland, OH 44111
November 11, 1979

EAST SIDE
NOTRE DAME COLLEGE
OF OHIO
4545 College Road
Cleveland, OH 44121
November 17, 1979

THE WOMEN-IN-THE-SCIENCES WORKSHOPS are designed to:

Give practical information:

a. Kinds of careers available in:

Biology	Mathematics
Chemistry	All types of Engineering
Physics	Science and Management
Computer Science	
Psychology	

b. Realistic job opportunities today and in the future

c. Kind of preparation needed in high school and college

PROGRAM

9:15	Registration
9:45	Opening Remarks
10:00	Keynote Speaker
10:30	Panel I
11:15	Snack Break
11:30	Panel II: Special Needs Section
12:30	Luncheon
1:30	Reconvene in Small Workshops Six small workshops with six professional women in each will run simultaneously and will be repeated three times during the afternoon.
1:30	Session I
2:00	Session II
2:30	Session III
3:15	Snacks and Final Rap Session
4:00	Return Evaluation Forms

REGISTRATION FORM: WOMEN IN THE SCIENCES CAREER WORKSHOP

Circle one: 1. West Side Workshop
St. Joseph Academy - Sunday, November 11

2. East Side Workshop
Notre Dame College of Ohio - Saturday, November 17

List Career Activities you attended in the past year: _____

NAME _____
ADDRESS _____
CITY _____ ZIP _____
PHONE _____
HIGH SCHOOL _____ SCIENCE TEACHER _____

Indicate your choices for the small afternoon sessions by #1, #2 and #3.
(Note that these will be run simultaneously for three different sessions.)

_____ Biological Sciences
_____ Chemistry and Physics
_____ Mathematics and Computer
_____ Non-Traditional Science Careers
_____ Social Sciences
_____ Engineering
_____ Earth and Environmental Sciences

THE WORKSHOP PROGRAM

8:00 REGISTRATION. Wilder Hall
Coffee and doughnuts

9:00 KEYNOTE ADDRESS. Finney Chapel

Welcome by ***James L. Powell***
Professor of Geology
Vice President and Provost
Oberlin College

Introduction by ***Anne Ruth Brummett***
Chairman, Department of Biology
Oberlin College

Keynote address by ***Betty M. Vetter***
Executive Director
Scientific Manpower Commission

Betty Vetter, one of the nation's most knowledgeable persons in matters of scientific manpower, is the Executive Director of the Scientific Manpower Commission, a private, non-profit corporation formed by a group of scientific societies to serve as a focus for common concerns about manpower. The Commission deals with career development in the sciences, with effective counseling for science careers and with the assessment of present and future employment opportunities in science and engineering.

Betty Vetter is the author of more then 70 articles and reports and is co-author with Eleanor L. Babco of ***Professional Women and Minorities — A Manpower Data Resource Service.***

10:30 and 11:15 INFORMATION SESSIONS. Wilder Hall

Information sessions in various fields, each led by an expert. These sessions will each be repeated once so each participant may go to two sessions.

Bioscience. ***Dorothy M. Skinner***
Professor of Biomedical Sciences
Oak Ridge National Laboratory

Chemistry. ***Virginia L. Cunningham***
Research Chemist
The Rohm and Haas Company

Economics. ***Dixie Sommers***
Labor Economist
Bureau of Labor Statistics

Engineering. ***Betty Del Duca***
Manager, International Crude Operations
The Standard Oil Company

Environmental Science.
Judy Y. Longfield, Chairman
Water Pollution Control Federation
Human Resources Committee
Catalytic Inc.

Geoscience. ***Helen M. McCammon***
Oceanographer
Department of Energy
U.S. Government

Health Related Science. ***Fay R. Biles***
Professor, School of Health,
Physical Education and Recreation
Kent State University

Information Science. ***Heberle Eyles***
Manager, Technical Information Services
Research and Development Department
The Proctor and Gamble Company

Mathematics, Statistics and Computer Science.
Kathleen R. Lamborn
Clinical Research Biostatistician
The Upjohn Company
Anne E. Martin
Delta Community College

Physics and Astronomy.
M. Susan Gussenhoven Shea
Space Physicist
Webb Associates and Boston College

Psychology. ***Nancy F. Russo***
Administrative Officer
Women's Programs
American Psychological Association

Social Science. ***Cora B. Marrett***
Associate Professor of Sociology
University of Wisconsin

12:15 LUNCHEON (no charge). South Hall

1:30 PANEL DISCUSSION. Wilder Hall

The Balancing Act:
Career, Marriage, Family.

A panel discussion and response from the floor. Consideration of the problems women may face trying to meet a variety of demands. The three panelists are women with different points of view at different stages in their careers.

"Reflecting." ***Helen M. McCammon***
Ph.D., Indiana University.
Presently Senior Oceanographer, Department of Energy, U.S. Government. Married 21 years to a geologist and mother of two children, ages 17 and 19.

"Coping." ***Kay Albertson Reed***
A.B., Oberlin College '65.
Currently in her senior year at the Medical College of Pennsylvania. Married to a sociologist and mother of two children, 12 and 14 years old.

"Looking Ahead." ***Helen D. Lann***
A.B., Oberlin College, '77, major in Biology. Presently teaching at the Fieldston School. Married to a graduate student in religion and contemplating further study.

Moderator. ***Paula L. Goldsmid***
Associate Dean of the College of Arts and Sciences and Assistant Professor of Sociology-Anthropology, Oberlin College.

3:00 INFORMAL DISCUSSIONS. Wilder Hall

Light refreshments.

For student participants, small informal discussions with the guest speakers.

Tours of laboratory and library facilities for those interested.

For the career counselors and faculty members of the participating institutions, a discussion **Advising Women on Science Careers** led by ***Mary Khosh,*** Associate Director of the Counseling and Advising Center, Baldwin-Wallace College.

4:00 - EVALUATION. Wilder Hall

Participants complete a workshop reaction questionnaire prior to leaving workshop.

REGISTRATION FORM

NAME _____

HOME ADDRESS _____

CITY _____ STATE _____ ZIP _____

COLLEGE ATTENDING _____

Circle One: Freshman Sophomore

Circle disciplines most likely to be interested in and indicate preference order 1, 2, 3.

- ☐ Biology
- ☐ Chemistry
- ☐ Computer Science
- ☐ Engineering
- ☐ Forensic Science
- ☐ Geology
- ☐ Health Sciences
- ☐ Management
- ☐ Mathematics
- ☐ Nutrition
- ☐ Physics
- ☐ Scientific Communication

Require motel reservations: ☐ yes ☐ no

Quad Room for _____, _____, _____, _____

List names of persons wishing to room with.

ABOUT THE WORKSHOP

The workshop is funded by a grant from the National Science Foundation under its Women in Science Program. The objective of the workshop is to acquaint college students with successful women scientists and engineers. . . to explore the varied and challenging career options. . . to discuss appropriate curriculum and. . .to encourage women to pursue a scientific career.

PARTICIPATION

Any freshman or sophomore female student within an approximate 100 mile radius of Arlington is eligible. (There are no charges or fees to participate in the workshop.) Each student will have the opportunity to interact with professional women scientists and engineers during the specialized smaller discussion groups during the afternoon session.

PROGRAM
Friday – 8:30-3:00

Welcome from UTA President
Dr. Wendell Nedderman – Professional Engineer

Outlook for Future Contributions by Women in Science and Technology
Dr. Betsy Ancker-Johnson, Assistant Secretary of Commerce – Physicist and Electrical Engineer

Don't Be A Science Dropout
Ms. Lynne Harrington Brown – Engineering Professor, Purdue University

Opportunities for Women in Managerial and Administrative Positions
Mrs. Helen Free – Chemist, Miles Laboratories, Elkhart, Indiana

Women in Engineering
Dr. Arminter Harness – National President of The Society for Women Engineers

Current Role of Women in Science and Engineering
Dr. V. Kistiakowsky – Physics Professor at M.I.T.

Career Opportunities for Women in Geosciences
Dr. Theresa Schwarzer – Exxon Research, Houston, Texas

CAREER INFORMATION
Friday Afternoon – 3:30-5:00

PANEL OF PROFESSIONALS

A panel of Professionals (academic and industrial) will discuss challenging careers in the following areas:

1. Biological Sciences – including environmental science and oceanography
2. Chemistry – including biochemistry
3. Engineering – both general and specialized
4. Forensic Science – criminalistics
5. Geosciences – special emphasis on energy problems
6. Health Science – including medical and dental
7. Nutrition and Food Science
8. Mathematics and Computer Science
9. Managerial and Administrative Opportunities
10. Psychology and Behavorial Science
11. Physics – including astronomy and meteorology
12. Scientific Communications – technical writing, library and media

CAREER DISPLAYS

Career displays will be available for viewing until 8:00 p.m.

ACTIVITIES AND ACCOMMODATIONS

Explore the Metroplex Area – visit places of interest – museums, theaters, recreational parks such as Six Flags. (Special discount rates available.)

A block of rooms has been reserved at Quality Inn Cibola – Quad Room at $26.00, accommodates 4. Indicate on the registration form if overnight accommodations are required and specific reservations will be made for you.

If you need transportation consult the Dean of Students or Dean of Science at your school. We recommend carpooling.

FURTHER INFORMATION

For further information contact:

Mrs. Ann Benham, Director
Career Workshop for Women
in Science and Engineering
College of Science
The University of Texas at Arlington
Arlington, Texas 76019

Telephone: 1–817-273-3491

WOMEN IN SCIENCE CAREERS WORKSHOP

6-7 October, 1978

Nebraska Center for Continuing Education
University of Nebraska-Lincoln

sponsored by
National Science Foundation
UN-L Graduate Women in Science

WOMEN IN SCIENCE CAREERS WORKSHOP

Friday, 6 October 1978

8:30 A.M. REGISTRATION
1st Floor Lobby

9:00 A.M. KEYNOTE ADDRESS
Auditorium
The Role of the Food and Drug Administration in the Introduction of New Drugs
Dr. Frances O. Kelsey, Director
Scientific Investigations Division
U.S. Food and Drug Administration

Welcome: **Prof. Anne M. Parkhurst**
Biometrics Center, UN-L
Dr. Sylvia Wiegand
Mathematics, UN-L

Introduction: **Dr. Martin A. Massengale**
Vice-Chancellor, Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln

10:00 A.M. BREAK AND REFRESHMENTS
1st Floor Lobby

10:30 A.M. SMALL DISCUSSION GROUPS
East Union Great Plains Room, 2nd Floor

12:00 P.M. LUNCHEON
Omaha Room

LUNCHEON ADDRESS
How to Cope with Covert Discrimination
Dr. Judith Ramaley
Professor, Physiology and Biophysics
University of Nebraska Medical Center,

1:30 P.M. TOURS
Businesses in the Lincoln Area and University Laboratories

4:30 P.M. SOCIAL HOUR
Auditorium

5:30 P.M. DINNER
Omaha Room

7:45 P.M. WOMEN SCIENTISTS' PANEL DISCUSSION
(Drs. Kelsey, Abbott, Frieze, Phillips, Shapiro and Waternaux)
Studio 1, NETV,
Telecommunications Building

Saturday, 7 October 1978

7:30 A.M. BREAKFAST
2nd Floor Lobby

8:30 A.M. LECTURES BY PROMINENT WOMEN SCIENTISTS
Ursula Abbott, Agriculture
University of California, Davis
What's New in Developmental Genetics?
York Room

Saturday, 7 October 1978 (continued)

Irene Frieze, Psychology
University of Pittsburgh
Beliefs About Success and Failure and the Woman Scientist
North Platte Room

Carolyn Phillips, Engineering
Shell Oil Company
Health, Safety and Engineering—A Challenge
Alliance Room

Lucille Shapiro, Life Sciences
Albert Einstein College of Medicine
The Application of Recombinant DNA Technology to the Biomedical Sciences
Norfolk Room

Christine Waternaux, Mathematics/Statistics
Harvard University School of Public Health
Mathematics and Statistics—Their Role in Public Health
Kearney Room

9:30 A.M. CAREER ADVISORS AND CAREER INFORMATION DISPLAYS
Omaha Room

10:30 A.M. LECTURES BY PROMINENT WOMEN SCIENTISTS
See Listing for 8:30 A.M. Session

11:30 A.M. DISCUSSION GROUPS
East Union Great Plains Room, 2nd Floor

12:30 P.M. LUNCH
Omaha Room

1:30 P.M. CAREER OPPORTUNITIES PANEL
Auditorium
Glenn Broden, Senior Personnel Representative Eli Lilly and Company
Rena Conner, Federal Women's Program Coordinator, Soil Conservation Service
Rose Faithe, M.D., Family Health Center, University of Nebraska Medical Center, Omaha
Liz Huff, Publications Editor, Nebraska Game and Parks Commission
Dr. Harly McAdams, Head of Corporate Economics, Bell Laboratories
William Spealman, Personnel Officer, Soil Conservation Service
Linda Wheeler, Manager DTS Engineering, General Systems Division, IBM Corporation

2:30 P.M. FAREWELL ADDRESS
Auditorium
Where To!
Dr. Anne Campbell
Nebraska Commissioner of Education

Schedule

Morning—Kaiser Auditorium

8:00 Registration

8:30 Welcome to Conference
Rhea Levine, *Program Coordinator*
Welcome to The Medical College of Pa.
Marion Fay, *President Emerita*

8:45 Keynote Address:
Opportunities for Women in Science
Betty Vetter, *Director, Scientific Manpower Commission, AAAS*

9:45 *Coffee Break*

10:15 Panel Discussion I:
Traditional and Alternate Careers in Science: Now and Future.
A discussion of current and projected opportunities in the University, Industry and the Government, including:
types of jobs, training necessary, salaries, benefits and affirmative action.

11:45 Panel Discussion II:
Mechanisms for Success.
A discussion of mechanisms of achieving training, retraining, employment and advancement in a science career. Topics will include: Networks, Job Counseling, On-Job Training and Special Problems of Minorities and the Handicapped.

1:15 Lunch With Professional Women
Medical College Cafeteria

Afternoon—Lecture and Conference Rooms (To be Announced)

2:30 Workshops, by Discipline
Resource persons will speak and answer questions regarding specific employment opportunities, training, job-sharing, *etc.* The groups below may be subdivided, according to demand.

- **A.** Life Sciences and Nutrition
- **B.** Physical Sciences, Math and Engineering
- **C.** Social and Behavioral Sciences

4:00 Opportunity will be provided for personal interaction with specific resource personnel with expertise in different specialized areas. You may join more than one group.
(Groups to be Announced)

5:00 Closing Remarks
Announcement of the
EDUCATIONAL CLEARINGHOUSE
to be established, completion of evaluation forms and collection of unanswered questions.

5:30 Reception for attendees and participants

To Register: Please return the attached application form by **Monday, November 19, 1979** to: **Science Careers,** Department of Anatomy, The Medical College of Pennsylvania, Philadelphia, PA 19129. For additional forms, or for late registration, call (215) 842-7033. A fee of $6.00 covers lunch, coffee breaks and materials.

Conference Participants

Katherine Daues	*Getty Oil Corp., TX*
Marion Fay	*Medical College of Pa., PA*
Toby Friedman	*Consulting Psychologist, PA*
Judy Green	*Rutgers Univ., NJ*
Dorothy Greenhouse	*ILAR Nat'l. Acad. Sci., DC*
Hebe Greiserstein	*Res. Inst. Alcoholism, NY*
Esther Hopkins	*Polaroid Corp., MA*
Shirley Jackson	*Bell Laboratories, NJ*
Mary Margaret Jotz	*SRI International, CA*
Margaret Kingdon	*Consulting Psychologist, MD*
Joan Lurie	*Rider College, NJ*
Naomi McAfee	*Westinghouse Corp., MD*
Judith Moody	*Univ. North Carolina, NC*
Chava Nachmias	*Univ. Wisconsin, WI*
Toby Needleman	*Bryn Mawr College, PA*
Nina Roscher	*American University, DC*
Joan Rosenblatt	*US Dept. Commerce, DC*
Nancy Russo	*Amer. Psychol. Ass'n., DC*
Cynthia Secor	*HERS/Midatlantic, PA*
Nancie Sharpless	*Albert Einstein Med., NY*
A. E. Sloan	*General Mills Inc., MN*
Cathy St. Hilaire	*Albert Einstein Med., PA*
Anne Swanson	*Edgewood College, WI*
Betty Vetter	*Sci. Manpower Comm., AAAS, DC*
Sharon Wallis	*Medical College of Pa., PA*

Conference Committee

Rhea J. C. Levine, Coordinator	Anatomy
Marilyn Appel	Medical Education
Nancy Berman	Physiology/Biochemistry
Myra Elfvin	Anatomy
Jane Glick	Physiology/Biochemistry
Claire Lathers	Pharmacology
Donna Murasko	Microbiology
Clifton Ogburn	Dean, Graduate School
Eva Ray	Physiology/Biochemistry
George Rothblatt	Physiology/Biochemistry
Sharon Wallis	Division of Women's Affairs

Application:
Science Careers in Search of Women

Deadline: Monday, November 19, 1979

If you would like to attend the SCIENCE CAREERS IN SEARCH OF WOMEN conference, please complete the following application. Return this form to:

SCIENCE CAREERS
Department of Anatomy
The Medical College of Pennsylvania
3300 Henry Avenue
Philadelphia, PA 19129

Before Mailing:
Be sure you have signed the informed consent form at the end of the application, indicated your workshop choice and enclosed your $6.00 registration fee.

NAME _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____
DAYTIME TELEPHONE _____ OTHER _____

EDUCATION HISTORY

1. Year of High School Graduation _____ 2. Yr(s) of College Degrees _____
   and Institution(s) _____
3. Undergraduate major _____ Graduate major _____
4. School last attended, if no degree received _____

EMPLOYMENT HISTORY

5. If employed, where are you now working? _____
6. Job title _____
7. Description of duties _____
8. Length of time at present job _____

9. Other jobs you've held in the last 5 years _____
   _____
10. How did you find your present job (check applicable boxes)?
    - ☐ Friend or family
    - ☐ Recruiting Officer
    - ☐ College Placement Office
    - ☐ Other
    - ☐ Want-ads
    - ☐ Recommendation of superior
11. If unemployed, are you now seeking work? _____
12. Have you looked for work in the last 6 months? _____
13. If YES, in what field? _____
14. If NO, do you plan to seek work in 1980? _____

CAREER PLANS

15. Are you interested in changing fields or areas within your field? _____
16. If YES, please describe _____
    _____
    _____

Application (continued)

17. At what level in your field (changed or current) would you like to be working in 5 years? _____

18. What resources would be useful to you in entering or advancing in your chosen profession? _____

19. Are you interested in an administrative or managerial role in your field? _____

20. Do you anticipate taking any additional course work specifically for your current or desired career? _____

21. If YES, what sorts of courses? _____

22. Where do you plan to take them? _____

23. Are you taking these to keep your skills current? _____
    To train or retrain for a new role? _____ Both? _____

24. Are you interested in part-time or job-sharing arrangements? _____
    On-site child care? _____ Provisions for the Handicapped? _____

PERSONAL INFORMATION (Optional)

Age _____

Children: Male(s) _____ Female(s) _____
Age(s) _____

Marital Status (check one) ☐ Single ☐ Married ☐ Widowed ☐ Divorced ☐ Separated

Physical handicap (describe) _____

Minority group _____

Please waive registration fee due to need ☐

AFTERNOON WORKSHOP CHOICES—FIELDS OF INTEREST (Check one):

- ☐ **A.** Life and Nutrition Sciences
- ☐ **B.** Physical Sciences, Math, Engineering
- ☐ **C.** Behavioral and Social Sciences

Informed Consent Form

Information collected on the application form will be used to supply the government funding agency with a statistical summary of demographic information about workshop participants. Subsequent to the workshop, you will be asked to evaluate the workshop and provide information about your academic and career plans. None of this information will be released with names attached.

It is, of course, your prerogative to refrain from answering any questions asked of you now or at some future point in time.

I have read the information presented above describing the project evaluation activities. I agree to have the information supplied by me used as stated.

_____
Signature

Directors and Co-Directors of NSF Supported Science Career Workshops (1978-80)

Acker, Joan R., Department of Sociology, University of Oregon, Eugene, OR 97403, (503) 686-3516 or 5002

Austin, Wanda, Engineering Analysis and Programming Department, The Aerospace Corporation, P.O. Box 92957, Los Angeles, CA 90009, (213) 648-6785

Barnes, Annie, Department of Sociology, Norfolk State College, Norfolk, VA 23504, (804) 623-8162

Beck, Betty, Department of Engineering Design and Economic Evaluation, University of Colorado, Boulder, CO 80309, (303) 492-5071

Benham, Ann, Department of Chemistry, University of Texas at Arlington, Arlington, TX 76019, (817) 273-3171

Ben-Jacob, Marion G., Department of Mathematics and Computer Science, Mercy College, 555 Broadway, Dobbs Ferry, NY 10522,
(directed project at State University of NY, College of New Paltz, NY)

Blackwell, Peggy J., Department of Behavioral Research, University of New Mexico, Albuquerque, NM 87131, (505) 277-4233

Block, Toby F., Manager, General Chemical Laboratories, Georgia Institute of Technology, Atlanta, GA 30332, (404) 894-4031
(directed project at University of Wisconsin, Stevens Point)

Blum, Lenore, Department of Mathematics and Computer Science, Mills College, Oakland, CA 94613, (415) 632-2700, ext. 347

Boxer, Marilyn J., Women's Studies Program, San Diego State University, San Diego, CA 92182, (714) 286-6524

Brechin, Jane, Associate Dean of Students, Department of Student Affairs, University of Tulsa, Tulsa, OK 74104, (918) 939-6351

Briscoe, Anne M., Department of Medicine, Harlem Hospital Center, New York, NY 10037, (212) 777-7498
(directed project at New York Academy of Sciences)

Brown, Mary Medill, Department of Biology, Knoxville College, Knoxville, TN 37902, (615) 546-0751, ext. 273

Burnley, Cynthia S., Department of Sociology, East Tennessee State University, Johnson City, TN 37601, (615) 929-5313

Cade, Ruth Ann, Department of Computer Science, (601) 266-7298, and
Tullos, Charlotte, Career Development Center, (601) 266-7111, University of Southern Mississippi, Hattiesburg, MS 39401

Caffery, Mary L., Department of Chemistry, Clarke College, Dubuque, IA 52001, (319) 588-6300

Campbell, Bonita J., Department of Mechanical, Civil and Industrial Engineering, California State University - Northridge, Northridge, CA 91330, (213) 885-2146

Chamberlin, Louise, Director of Admissions, Brawn Annex, New Mexico Institute of Mining and Technology, Socorro, NM 87801, (505) 835-5424

Chang, Elizabeth B., Department of Mathematics, Hood College, Frederick, MD 21701, (301) 663-3131, ext. 333

Cherry, Nancy Cook, School of Engineering, University of Dayton, Dayton, OH 45469, (513) 229-2736

Cohen, Larry, Department of Zoology, Pomona College, Claremont, CA 91711, (714) 626-8511, ext. 2965 or 2950

DeChant, Sister Jeanmarie, Department of Chemistry, Notre Dame College, Cleveland, OH 44121, (216) 381-1680, ext. 36

Dietrich, Allene, Center for Women's Services, Western Michigan University, Kalamazoo, MI 49008, (616) 383-6097

DiLeo, Jean Cohen, Counseling Center, Tulane University, New Orleans, LA 70118, (504) 865-5761 or 4424

Dixon, Linda K., Department of Biology, (303) 629-2658, Everett, Jana G., Department of Political Science, (303) 629-2616, University of Colorado at Denver, Denver, CO 80202

Donnerstein, Marcia, Department of Psychology, Iowa State University, Ames, IA 50010, (515) 294-7612

Downer, Nancy W., Department of Biochemistry, (602) 327-4057, and
Dworkin, Judith M., Department of Hydrology and Water Resources, (602) 626-4130, University of Arizona, Tucson, AZ 85721

Drisko, Ronald L., Department of Chemistry, Essex Community College, Baltimore, MD 21237, (301) 682-6000

Elfvin, Myra, Department of Anatomy, The Medical College of Pennsylvania, Philadelphia, PA 19129, (215) 842-7037

Falconer, Etta, Department of Mathematics, Spelman College, Atlanta, GA 30314, (404) 681-3643, ext. 281

Franz, Judy, Department of Physics, Indiana University, Bloomington, IN 47401, (812) 337-4359

Fresquez, Sister Catalina, Department of Natural Sciences, Incarnate Word College, San Antonio, TX 78209, (512) 828-1261

Gatz, Carole R., Department of Chemistry, Portland State University, Portland, OR 97207, (503) 229-3811

Gersick, Connie, Director, Office on Education of Women, Yale University, New Haven, CT 06520, (203) 436-8744

Goldamid, Paula, Assoc. Dean, College of Arts and Science, Oberlin College, Oberlin, OH 44074, (216) 775-8410

Goodhue, Margaret H., Department of Biology, University of Wisconsin, Stevens Point, WI 54481, (715) 346-2009
(replaced Toby Block)

Goodman, Madeline J., Women's Studies Program, University of Hawaii at Manoa, Honolulu, HI 96822, (808) 948-7464

Gordon, Jean, Department of Mathematics, Williams College, Williamstown, MA 01267, (413) 597-2324

Gordon, Margaret A., Department of Biology, James Madison University, Harrisonburg, VA 22801, (703) 433-6225

Graham, Mildred W., Department of Curriculum and Instruction, Georgia State University, Atlanta, GA 30303, (404) 658-2518

Gray, Lou A., Department of Mathematics, Jackson State University, Jackson, MS 39217, (601) 968-2164

Gullahorn, Jeanne E., Department of Psychology, Michigan State University, East Lansing, MI 44824, (517) 353-8672

Hansen, Jo Ann Brown, Department of Pharmacology, University of Arizona, Tucson, AZ 85721, (602) 882-6044

Heller, Barbara R., Center for Advanced Study in Education, City University of New York Graduate School, New York, NY 10036, (212) 221-3519

Herrmann, Susan, Purdue University School of Engineering and Technology, 799 West Michigan Street, Indianapolis, IN 46202, (317) 264-2943

Juister, Barbara, Department of Mathematics, Elgin Community College, Elgin, IL 60120, (312) 697-1000

Kivelson, Margaret, Department of Geophysics, University of California, Los Angeles, CA 90024, (213) 825-2295

Krause, Brigitte, Department of Physics, Northern Illinois University, DeKalb, IL 60115, (815) 753-0296

Kreinberg, Nancy (415) 642-1823, and MacDonald, Jan (415) 635-5074, Math/Science Network, Mills College, Oakland, CA 94613

Kriegsman, Helen F., Department of Mathematics, Pittsburg State University, Pittsburg, KS 66762, (316) 231-7000

Kurth, Suzanne, Department of Sociology, University of Tennessee at Knoxville, Knoxville, TN 37916, (615) 974-2540

Lanza, Janet, Department of Biology, Bethany College, Bethany, WV 26032, (304) 829-7641

Lee, Aldora, Women Studies Program, Washington State University, Pullman, WA 99163, (509) 335-7958

Levine, Rhea J. C., Department of Anatomy, The Medical College of Pennsylvania, Philadelphia, PA 19129, (215) 842-7033

Lindner, Rosalyn, Department of Sociology, State University of New York at Buffalo, NY 14222, (716) 862-5534 or 5411

Martin, Julia M., Dean, College of Sciences, Southern University, Baton Rouge, LA 70813, (504) 771-5170

Martin, Nancy, WANG Institute of Graduate Studies, Tyng Road, Tyngsboro, MA 01879, (617) 649-9731 (directed project at University of New Mexico)

Mauston, Glenn, Department of Biology, Mesabi State Junior College, Virginia, MN 55792, (218) 741-9200, ext. 58

McGivern, Mary Jean, Department of Biology, College of St. Elizabeth, Convent Station, NJ 07961, (201) 539-1600 (also directed project at Dutchess Community College, Poughkeepsie, NY)

Meislich, Estelle K., Department of Physical Science and Mathematics, Bergen Community College, Paramus, NJ 07652, (201) 447-1500

Miller, Molly Fritz, Department of Geology, Vanderbilt University, Nashville, TN 37240, (615) 322-2986

Morrison, Jeanne L., Department of Psychology, Talladega College, Talladega, AL 35160, (205) 362-6610

Nelson, Ralph T., Columbia Education Center, 11325 S.E. Lexington, Portland, OR 97266, (503) 760-2346 or (503) 229-4626

Nelson, Elizabeth Nese, Department of Sociology, California State University at Fresno, Fresno, CA 93740, (209) 487-2891

Nichparenko, Sue, Department of Physical Science, Cabrillo College, Aptos, CA 95003, (408) 425-6296

Osborne, James B., Cooperative Education and Internship Program, (205) 348-6422, and
Mitchell, Joan, Academic Services, College of Arts and Sciences, (205) 348-7007, University of Alabama, University, AL 35486

Pate, Charles B., Department of Chemistry, Salem College, Winston-Salem, NC 27108, (916) 723-7961

Permaul, Jane Szutu, Director, O.I.D.—Field Studies Development, University of California - Los Angeles, Los Angeles, CA 90024, (213) 825-9769

Perry, D. Gaye, Address unknown, directed project at Texas Southern University, Houston, TX 77004

Pethica, Brian, Dean, School of Arts and Sciences, Clarkson College of Technology, Potsdam, NY 13676, (315) 268-6516

Place, Carol, Center for Educational Research and Evaluation, Research Triangle Institute, P.O. Box 12194, Research Triangle Park, NC 27709, (919) 541-6318

Plas, Jeanne M., Programs for Human Development Specialists, Box 319, George Peabody College for Teachers, Vanderbilt University, Nashville, TN 37203, (615) 327-8208

Platt, Dorothy B., Department of Biology, Temple University, Philadelphia, PA 19122, (215) 787-8839

Pogosian, Barbara, Department of Biology, Golden West College, Huntington Beach, CA 92647, (714) 892-7711

Raine, Dorothy P., Student Personnel Center, S.D. Bishop State Junior College, Mobile, AL 36603, (205) 690-6422

Roe, Alicia O., Department of Natural Sciences, Metropolitan Campus, Inter-American University, P.O. Box 1293, Hato Rey, Puerto Rico 00919, (809) 753-8008, ext. 215

Sauers, Carol, Department of Chemistry, Douglass College, Rutgers, The State University of New Jersey, New Brunswick, NJ 08903, (201) 932-9852

Scheerer, Anne E., Dean, Summer Session and Lifelong Learning Center, Creighton University, Omaha, NB 68178, (402) 449-2888

Schweber, Miriam S., Harvard Biolabs, Cambridge, MA 02138, (617) 495-7899
(directed project at Simmons College, Boston, MA)

Schwintzer, Christa, College of Environmental Sciences, University of Wisconsin-Green Bay, Green Bay, WI 54302, (414) 465-2261

Shaw, Carol M., Assistant Dean, School of Engineering, University of Dayton, Dayton, OH 45469, (513) 229-2736

Simpson, Barbara E., Department of Psychology, Gustavus Adolphus College, St. Peter, MN 56082, (507) 931-4300, ext. 314

Sloane, Ethel, Department of Zoology, University of Wisconsin-Milwaukee, Milwaukee, WI 53201, (414) 963-5762

Solinger, Rickie, Assistant Dean, College of Liberal Arts and Sciences, State University of New York at New Paltz, 12561, (914) 257-2656
(replaced Marion G. Ben-Jacob)

Sons, Linda, Department of Mathematical Sciences, (815) 753-0567, and
Godfrey, Eleanor P., Department of Sociology, (815) 753-1194, Northern Illinois University, DeKalb, IL 60115

Sprandel, Hazel Z., Special Educational Services Center, Washington University, Box 1135, St. Louis, MO 63130, (314) 863-0100, ext. 3166

Sterner, Wanda, Department of Chemistry, Cerritos Community College, Norwalk, CA 90650, (213) 860-2451

Stevens, W. Williams, Jr., Division of Academic Affairs, Illinois Legislative Studies Center, Sangamon State University, Springfield, IL 62708, (217) 786-6028

Stringer, Patricia A., Associate Dean, Graduate School, Emory University, Atlanta, GA 30322, (404) 329-6468

Stroup, Kala Mays, Vice President for Academic Affairs, Emporia State University, Emporia, KS 66801, (316) 343-1200 (directed Project at the University of Kansas)

Sullivan, Patricia, Department of Biology, P.O. Box 23971, Texas Woman's University, Denton, TX 76204, (817) 387-3856 (directed project at Wells College, NY)

Tobias, Joyce W., Director of Educational Research and Development, College of Pharmacy and Pharmacal Sciences, Howard University, Washington, D.C. 20059, (202) 636-6544

Troyer, Stephanie E., Department of Mathematics and Physics, University of Hartford, West Hartford, CT 06117, (203) 243-4517

Truex, Anne Thorsen, Minnesota Women's Center, (612) 373-3850, and
Spector, Janet, Department of Anthropology, (612) 376-7590, University of Minnesota, Twin Cities, Minneapolis, MN 55455

Tsutsui, Ethel Ashworth, Department of Biochemistry and Biophysics, Texas A&M University, College Station, TX 77843, (713) 845-5338

Tuech, Jean K., Department of Biology, Christian Brothers College, Memphis, TN 38104, (901) 278-0100, ext. 207

Turner, Henri M., Department of Biology, Morris Brown College, Atlanta, GA 30314, (404) 525-7831, ext. 64 or 60

Wake, Marvalee H., Department of Zoology, (415) 642-4743, and
Kreinberg, Nancy, Lawrence Hall of Science, (415) 642-1823, University of California at Berkeley, Berkeley, CA 94720

Watts, Virginia S., Dean's Office, College of Science and Liberal Studies, Georgia Institute of Technology, Atlanta, GA 30332, (404) 894-3300

Weiser, Florence, Office of Academic Administration, California State College-San Bernardino, San Bernardino, CA 92407, (714) 887-7517

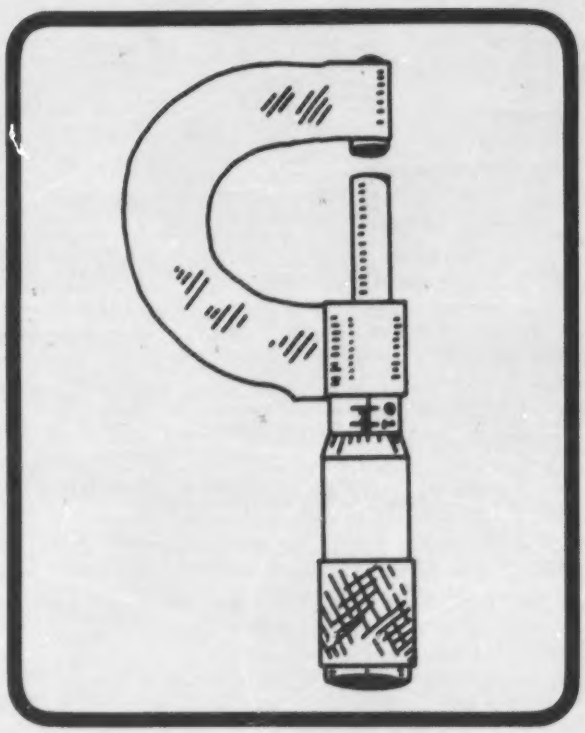
Whisler, Marilyn, Department of Political Science, University of Central Florida, Orlando, FL 32816, (305) 275-2608

Wiegand, Sylvia, Department of Mathematics, University of Nebraska - Lincoln, Lincoln, NB 68588, (402) 472-3731

Wilkening, Laurel, Department of Planetary Science, (602) 884-2806, and
Dinnerstein, Myra, Women's Study Committee, (602) 626-4477, University of Arizona, Tucson, AZ 85721

Wood, Bonnie Gay, Department of Zoology, University of Maine at Orono, Orono, ME 04473, (207) 581-7960

Yager, Robert E., Coordinator of Science Education, (319) 353-3600, and
Simonis, Doris A., Department of Science Education, (319) 353-6592, University of Iowa, Iowa City, IA 52242



Committees of/for Women Within Associations of Scientists and Associations of/for Women Scientists

Adapted from a compilation prepared by Paula Quick Hall and Anne Swarts

Office of Opportunities in Science
American Association for the Advancement of Science
1776 Massachusetts Avenue, N.W.
Washington, D.C. 20036

American Anthropological Association
1703 New Hampshire Ave., N.W.
Washington, D.C. 20009
Committee on the Status of Women in Anthropology
Professor Carole Hill
Department of Anthropology
Georgia State University
Atlanta, GA 30303

American Astronomical Society
211 FitzRandolph Rd.
Princeton, NJ 08540
Committee on the Status of Women
Dr. A. P. Cowley
Astronomy Department
University of Michigan
Ann Arbor, MI 48109

American Association of Immunologists
9650 Rockville Pike
Bethesda, MD 20014
Committee on Women's Affairs
Ms. Blanche Reines
American Association of Immunologists
(same address as above)

American Society for Cell Biology
c/o Nancy L. R. Bucher, M.D.
Huntington Laboratories
Massachusetts General Hospital
Boston, MA 02114
Women in Cell Biology
c/o Dr. Elizabeth Harris
Department of Botany
Duke University
Durham, NC 27706

American Society for Microbiology
1913 Eye St., N.W.
Washington, D.C. 20006
Committee on the Status of Women Microbiologists
Mr. Robert D. Watkins and Ms. Janet L. Shoemaker,
Staff Liaisons
American Society for Microbiology
(same address as above)

American Society of Biological Chemists
9650 Rockville Pike
Bethesda, MD 20014
Committee on Equal Opportunities for Women
Chair of the Committee
(same address as above)
Committee co-chairs: Dr. Elizabeth S. Maxwell and
Dr. Elizabeth P. Anderson (both Bethesda, MD)

Biophysical Society
c/o Dr. M. O. Dayhoff
National Biomedical Research Foundation
Georgetown University Medical Center
3900 Reservoir Rd., N.W.
Washington, D.C. 20007
Committee on Professional Opportunities for Women
Dr. Barbara Brodsky
Dept. of Biochemistry
Rutgers School of Medicine
Piscataway, NJ 08854

American Chemical Society
1155 16th St., N.W.
Washington, D.C. 20036
Women Chemists Committee
Staff Liaison
American Chemical Society
(same address as above)

International Communication Association
Balcones Research Center
10, 100 Burnet Rd.
Austin, TX 78758
Committee on the Status of Women
Dr. Carol Lee Hilewick
Office of International Communication Policy
International Communication Agency
1750 Pennsylvania Ave., N.W.
Washington, D.C. 20547

The Linguistic Society of America
Secretariat
1611 North Kent St.
Arlington, VA 22209
Committee on the Status of Women
Dr. Suzette Elgin
Linguistics Department
San Diego State University
San Diego, CA 92182

Association for Women in Computing
c/o Nancy Bonney Bryan
EG & G Mason Research Institute
1530 E. Jefferson St.
Rockville, MD 20852

Society for Women in Computing
Dr. Carma L. McClure
Planmetrics Inc.
5320 Sears Tower
233 South Wacker Dr.
Chicago, IL 60606

American Association of Women Dentists
Eric Bishop, Executive Director
Eric Bishop & Associates
211 E. Chicago Ave., Room 1636
Chicago, IL 60611

American Economic Association
1313 Twenty-first Ave., South
Nashville, TN 37212
Committee on the Status of Women in the Economic Profession
Dr. Elizabeth Bailey
Civil Aeronautics Board
1825 Connecticut Ave., N.W., Room 1015
Washington, D.C. 20428

Atomic Industrial Forum, Inc.
7101 Wisconsin Ave., N.W.
Washington, D.C. 20014
Nuclear Energy Women
Ms. Ruth Faulkner
Salt River Project
P.O. Box 1980
Phoenix, AZ 85001

Society of Women Engineers
Ms. Mary Lou Barnaa, Executive Secretary
United Engineering Center, Room 305
345 East 47th St.
New York, NY 10017

WISE (Women in Science and Engineering), Boston
c/o Dr. Miriam Schweber
22 Turning Hill Rd.
Lexington, MA 02171

Association of American Geographers
1710 Sixteenth St., N.W.
Washington, D.C. 20009
Committee on the Status of Women Geographers
Professor Clare M. Stapleton
Department of Geography
University of Wisconsin
Madison, WI 53706

American Geological Institute
5205 Leesburg Pike
Falls Church, VA 22041
Women Geoscientists Committee
Dr. Louise Levien
(same address as above)

Society of Exploration Geophysicists
P.O. Box 3098
Tulsa, OK 74101
Committee for Women in Geophysics
Katherine R. Daues
3922 W. Alabama #2
Houston, TX 77027

Association of Women Geoscientists
Catherine Kitcho
P.O. Box 1005
Menlo Park, CA 94025

History of Science Society
c/o Dr. Sally Gregory Kohlstedt, Secretary
311 Maxwell Hall
Syracuse University
Syracuse, NY 13210
Committee on Women
Committee Chair
c/o Dr. Sally Gregory Kohlstedt
(same address as above)

Society for the History of Technology
c/o Dr. Carroll Pursell
Department of History
University of California - Santa Barbara
Santa Barbara, CA 93106
Women in Technological History (WITH)
Dr. Elizabeth Hitz
Old Bethpage Village Restoration
Round Swamp Rd.
Old Bethpage, NY 11804

Association for Women in Mathematics
Center for Research on Women in Higher Education and the Professions
Wellesley College
828 Washington St.
Wellesley, MA 02181

Women and Mathematics Education
Dr. Judith E. Jacobs
c/o Education Department
George Mason University
4400 University Dr.
Fairfax, VA 22030

Society for Industrial and Applied Mathematics
Mathematical Association of America
American Mathematical Society
Committee on Women in Mathematics
Dr. Alice T. Schafer, Chair
Department of Mathematics
Wellesley College
Wellesley, MA 02181

American Psychiatric Association
1700 18th St., N.W.
Washington, D.C. 20009
Committee on Women
Dr. Jeanne Spurlock
Deputy Medical Director
American Psychiatric Association
(same address as above)

American Medical Women's Association
Lorraine Loesel, Executive Director
1740 Broadway
New York, NY 10019

American Meteorological Society
45 Beacon St.
Boston, MA 02108
Board of Women and Minorities
Dr. Jay Fein
Office of Climate Dynamics
National Science Foundation
Washington, D.C. 20550

The American Physical Society
335 East 45th St.
New York, NY 10017
Committee on the Status of Women in Physics
Dr. Carol Jo Crannell
Goddard Space Flight Center
NASA Code 684
Greenbelt, MD 20771

American Political Science Association
1527 New Hampshire Ave., N.W.
Washington, D.C. 20036
Committee on the Status of Women in the Profession
Dr. Susan Woodward
(same address as above)

Association for Women in Psychology
P. Kay Coleman, Harrier
225 S. 18th St., #PH-S
Philadelphia, PA 19103

American Psychological Association
1200 17th St., N.W.
Washington, D.C. 20036
Committee on Women in Psychology
Dr. Nancy Felipe Russo, Staff Liaison
Committee on Women in Psychology
American Psychological Association
(same address as above)

Association for Women in Science, Inc.
E. Balzer, Executive Secretary
1346 Connecticut Ave., N.W., Suite 1122
Washington, D.C. 20036

National Network of Minority Women in Science
Paula Quick Hall
American Association for the Advancement of Science
Office of Opportunities in Science
1776 Massachusetts Ave., N.W.
Washington, D.C. 20036

Math/Science Network
Math/Science Resource Center
Mills College
Oakland, CA 94613

American Association for the Advancement of Science
1515 Massachusetts Ave., N.W.
Washington, D.C. 20005
Committee on Opportunities in Science
Dr. Shirley Mahaley Malcom, Head
Office of Opportunities in Science
American Association for the Advancement of Science
1776 Massachusetts Ave., N.W.
Washington, D.C. 20036

Sigma Delta Epsilon, Graduate Women in Science, Inc.
Headquarters Office
1346 Connecticut Ave., N.W., Room 1102
Washington, D.C. 20036

American Sociological Association
1722 N St., N.W.
Washington, D.C. 20036
Committee on the Status of Women in Sociology
Dr. Doris Wilkinson, Executive Associate
Office of Careers, Minorities and Women
The American Sociological Association
(same address as above)

Sociologists for Women in Society
(Women's Caucus of the American Sociological Association)
c/o Dr. Pamela Roby
Sociology Department
Kresge College
University of California - Santa Cruz
Santa Cruz, CA 95064

American Statistical Association
806 15th St., N.W.
Washington, D.C. 20005
Committee on Women in Statistics
Dr. Jane F. Gentlemen
Committee on Women in Statistics
American Statistical Association
(same address as above)

Associations of/for Scientists of Racial and Ethnic Minority Groups

Adapted from a compilation prepared by Paula Quick Hall and Anne Swartz

The Office of Opportunities in Science
The American Association for the Advancement of Science
1776 Massachusetts Avenue, N.W.
Washington, D.C. 20036

National Organization for the Professional Advancement of Black Chemists and Chemical Engineers
c/o Mrs. Maerean Bohannon (Executive Secretary)
3629 North Leroy
Peoria, IL 61604

National Dental Association
Ms. Eleanor High, Administrator
734 Fifteenth St., N.W.
Washington, D.C. 20005

American Association of Blacks in Energy
L. C. Taliaferro, Secretary
1429 Larimer Square
Denver, CO 80202

American Indian Council of Architects and Engineers
Mr. Neal McCaleb, Chairman
P.O. Box 111
Edmond, OK 73034

Association of Black Engineers and Applied Scientists
667 Merrick, Room 6
Wayne State University
Detroit, MI 48202

The Los Angeles Council of Black Professional Engineers
Federal Building
P.O. Box 945
Los Angeles, CA 90053

Puerto Rican Engineers and Scientists Society (PRESS)
c/o ME 3
345 East 47 St.
New York, NY 10017

Society of Hispanic Professional Engineers
P.O. Box 48 Main Office
Los Angeles, CA 90053

National Association of Mathematicians
Dr. Johnny Houston (Executive Secretary)
Department of Mathematics
Atlanta University
Atlanta, GA 30314

Association of American Indian Physicians
Mr. William Wilson, Executive Director
6801 S. Western, Suite 206
Oklahoma City, OK 73139

National Medical Association
Mr. Alfred F. Fisher, Executive Vice President
1720 Massachusetts Ave., N.W.
Washington, D.C. 20036

Student National Medical Association
John Clyburn, Executive Administrator
600 E St., N.W., Suite 100
Washington, D.C. 20004

National Pharmaceutical Association
James N. Tyson
Howard University College of Pharmacy
2300 4th St., N.W.
Washington, D.C. 20059

Society of Black Physicists
Department of Physics
Morehouse College
Atlanta, GA 30314

National Conference of Black Political Scientists
Department of Political Science
Morgan State University
Baltimore, MD 21239

Asian American Psychological Association
Dr. Stanley Sue
Department of Psychology
University of Washington
Seattle, WA 98185

The Association of Black Psychologists
Nsenga Warfield Coppock, Executive Administrator
P.O. Box 2929
Washington, D.C. 20013

Association of Psychologists for La Raza
708 Ithaca
Boulder, CO 80303

Society of Indian Psychologists
Dr. Leo David Jacobs,
Room 251 Gaines Hall
840 S.W. Gaines Rd.
Portland, OR 97201

American Indian Science and Engineering Society (AISES)
P.O. Box 1980
Phoenix, AZ 85001

National Institute of Science
Dr. L. Shelbert Smith
Department of Chemistry
Central State University
Wilberforce, OH 45384

Organization of Black Scientists, Inc.
P.O. Box 8715
Washington, D.C. 20011

Society for Advancement of Chicanos and Native Americans in Science (SACNAS)
P.O. Box 3831
Albuquerque, NM 87192

Association of Black Sociologists
Morgan State University
Baltimore, MD 21239

National Technical Association, Inc.
Ms. Sandra A. Jackson, Executive Secretary
Suite 715, Southern Building
1425 H St., N.W.
Washington, D.C. 20005

A Selected List of Resource Materials

General Career Information*

Careers for Women in the 70s, Women's Bureau, Department of Labor, U.S. Government Printing Office, Washington, D.C. 20402, 1973. $.50/copy.
Expected numbers of openings in particular fields are presented as well as the employment picture for women. The suggestion is made that women's careers should not be any different from men's.

Engineering as a Profession for Women, Engineering Manpower Bulletin #29, Engineering Manpower Commission, NY, NY 10017, 1976. $2.00/copy.
Discusses misconceptions, current employment picture, barriers, and problems faced by women in engineering, and also talks about why engineering needs women.

Federal Career Directory, U.S. Civil Service Commission, U.S. Government Printing Office, Washington, D.C. 20402, 1976-77. $3.45/copy. #006-000-00900-0 (202) 783-3238. Describes federal careers, employers and job briefs.

I'm Madly in Love With Electricity and Other Comments About Their Work by Women in Science and Engineering, Lawrence Hall of Science, University of California, Berkeley, CA 94720, 1978. ATTN: Careers. $2.00/copy, bulk rates available. (415) 642-1823.
Provides insights into the lives and work of 70 women who discuss their jobs and education and offer advice and encouragement to students.

I Can Be Anything—Careers and Colleges for Young Women, Mitchell, College Entrance Examination Board, Princeton, NJ 08540, 1975. $4.50/paperback; $6.50/hardcover.
Describes careers for young women—and certainly all careers are for women. Goes beyond a description of career information and introduces the critical consideration for girls and women: the consideration of a life style.

Keys to Careers in Science and Technology, National Science Teachers Association, 1742 Connecticut Ave., N.W., Washington, D.C. 20036, 1973. $1.00/copy.
Comprehensive bibliography of career guidance publications and information on scholarships and loans, special programs for students and teachers, awards, and agencies.

Manual on Program Operations for the Visiting Women Scientists Program, Weiss, Iris R. and Conaway, Larry E., Research Triangle Institute, Research Triangle Park, NC 27709, 1979.
A fifty-three page comprehensive manual on the planning, execution and evaluation of a nationally tested program to motivate women students on a secondary level to pursue careers in science and technology.

New Career Options for Women—A Counselor's Sourcebook, $16.95; *New Career Options*—A Woman's Guide, $4.95; *New Career Options for Women*—A Selected Annotated Bibliography, $9.95; Human Sciences Press, NY, NY 10011, 1977. Set of three publications approximately $26.00.
Excellent set of source books dealing with careers for women. Reviews employment opportunities, legislation, practical advice regarding family and work, and suggestions for career and educational planning.

* This list was adapted from a compilation prepared for the 1978 Visiting Women Scientists' Program, directed by Research Triangle Institute, North Carolina, and supported by the National Science Foundation.

Occupational Outlook Handbook, U.S. Department of Labor, Bureau of Labor Statistics, U.S. Government Printing Office, Washington, D.C. 20402, 1978-79. $8.00/copy. General reference book providing descriptions of about 850 occupations including: the nature of the work, places of employment, qualifications needed, earnings and working conditions, sources of additional information.

Planning for Career Options, CATALYST, 14 East 60th St., NY, NY 10022. $1.95/copy, bulk rates available, orders $5.00 add $.50 postage. (212) 759-9700.

Science and Your Career, U.S. Department of Labor, Bureau of Labor Statistics, 1515 Broadway, Suite 3400, NY, NY 10036. Free (212) 399-5405.

Science Career Exploration for Women, Smith, Walter S. and Stroup, Kala M. National Science Teacher's Association, 1742 Connecticut Ave., N.W. Washington, D.C. 20009, 1978. $2.50/copy.
For use by teachers, this booklet includes activities in which young women analyze their strengths and devise their own goals.

Scientific and Engineering Careers: A Bibliography, Scientific Manpower Commission, 1776 Massachusetts Ave., N.W., Washington, D.C. 20036, 1974. $2.00/copy, $1.00 each for 25 copies or more.
Comprehensive bibliography of career guidance information in science and engineering, with complete source address, cost, etc. Also a section about financial aid.

Supply and Demand for Scientists and Engineers, Vetter, Betty, Scientific Manpower Commission, 1776 Massachusetts Ave., N.W., Washington, D.C. 20036, 1977. $1.50/copy.
An excellent review of studies including projections of the supply and demand for scientists and engineers.

Test Yourself for Science, Scientific Manpower Commission, 1776 Massachusetts Ave., N.W., Washington, D.C. 20036, 1971. $1.00/copy, $.50 each for 25 copies or more.
For students, this booklet contains puzzles and problems to think about and try to solve; also included is a section which suggests how to get more information about careers in science.

U.S. Working Women - A Chartbook, U.S. Department of Labor, Bureau of Labor Statistics, U.S. Government Printing Office, Washington, D.C. 20402, 1975. $1.75/copy. Through charts and graphs, a wide range of data are presented on the characteristics of American working women and their changing status over the last quarter of a century.

What Can I Be? A Guide to 525 Liberal Arts and Business Careers, Lieberman, Leo, Martin M. Bruce, Ph.D., publishers, Box 228, New Rochelle, NY 10804. $6.75/copy.
Presents the required and desirable academic majors, abilities and educational degrees for students who know the career they want; provides suggested majors and careers based on school subjects enjoyed in the past, for students who have not yet decided on a career or occupation.

Women and Success—The Anatomy of Achievements, Kundsin, Ruth B., Editor, William Morrow and Co., Inc., NY, 1974. $4.95/copy, for bulk rates call (800) 631-1199. Profiles of women in careers in crystallography, mathematics, electrical engineering, physics, meteorology, chemistry, etc.

Women in Science and Technology, ACT Publications, P.O. Box 168, Iowa City, IA 52240. $1.50/copy, bulk rates available. (319) 356-3711.

Biological Sciences

Careers in Biology, Education Department, American Institute of Biological Sciences, 1401 Wilson Blvd., Arlington, VA 22209. Free first copy, $.20 each for additional (703) 527-6776.

Ecology and Your Career, U.S. Department of Labor, Bureau of Labor Statistics, 1515 Broadway, Suite 3400, NY, NY 10036. free (212) 399-5405.

The Outdoors and Your Career, U.S. Department of Labor, Bureau of Labor Statistics, 1515 Broadway, Suite 3400, NY, NY 10036. free (212) 399-5405.

Engineering

Engineering - A Career of Dedication and Responsibility, National Society of Professional Engineers, 2029 K. St., N.W., Washington, D.C. 20006. free/single copy, $100./1000 copies. (202) 331-7020.

Womengineer, Engineers Council for Professional Development, 345 East 47th St., NY, NY 10017. $.35/copy, 10% discount for 50 copies or more (212) 644-7685.

Women in Engineering at Kodak, Corporate Information Department, Eastman Kodak Company, Rochester, NY 14650. free/single copy, bulk rates available. (716) 724-4000.

Mathematics

Careers in Statistics, Committee of Presidents of Statistical Societies, c/o American Statistical Association, 806 15th St., N.W., Washington, D.C. 20005. free/1-24 copies, $.10 each for 25 copies or more. (202) 393-3253.

The Math in High School . . You'll need for College, Mathematical Association of America, 1225 Connecticut Ave., N.W., Washington, D.C. 20036. free/50 copies, $2.50/100 copies, $4.00/150 copies, $7.00/250 copies, $10.00/350 copies, $15./550 copies, $25.00/1050 copies; all hundred increments above 1000 copies are an additional $2.50/increment, orders under $25.00 must be pre-paid. (202) 387-5200.

Physical Sciences

Careers in Chemistry Questions and Answers, American Chemical Society, Department of Educational Activities, 1155 16th St., N.W. Washington, D.C. 20036. free/first copy, $.15 each additional, bulk rates available. (202) 872-4600.

Careers in Chemistry Today, American Chemical Society, Department of Educational Activities, 1155 16th St., N.W., Washington, D.C. 20036. free/first copy, $.20 each additional, bulk rates available. (202) 872-4600.

Careers Nontraditional, American Chemical Society, Department of Educational Activities, 1155 16th St., N.W., Washington, D.C. 20036. free/first copy, $.50 each additional, bulk rates available. (202) 872-4600.

Space for Women, Center for Astrophysics, Harvard University, Cambridge, MA 02138. Free. (617) 495-7461.

Women in Physics, American Physical Society, Committee on the Status of Women in Physics, 335 East 45th St., NY, NY 10017. free/first copy, $.50 each additional. (212) 682-7341.

Social Sciences

Careers and the Study of Political Science, Curzan, American Political Science Association, 1527 New Hampshire Ave., Washington, D.C. 20036. $1.00/each, $5.00/bundle of 10 copies, $22.50/bundle of 50 copies, $40.00/bundle of 100 copies. (202) 483-2512.

Careers in Geography, Association of American Geographers, 1710 16th St., N.W., Washington, D.C. 20009. Free/first copy, $.45 each/2-10 copies, $.40 each/11-50 copies, $.35 each for 51 copies or more. (202) 234-1450.

Social Science and Your Career, U.S. Department of Labor, Bureau of Labor Statistics, 1515 Broadway, Suite 3400, NY, NY 10036. Free. (212) 399-5405.

Re-Entry Women*

Cremer, Christine. *A Resource Directory for Women Moving Up!* Berkeley: Lawrence Hall of Science, 1980. $5.00/copy from Lawrence Hall of Science, University of California, Berkeley, CA. (415) 642-1832.
Excellent compilation of profiles of resource women, nonprofit agencies, industries, organizations, graduate programs and financial aid to help women moving into scientific and technical management.

Ekstrom, Ruth B. *How to Get College Credit for What You Have Learned as a Homemaker and Volunteer*. Princeton, NJ: Educational Testing Service, 1977. Item #209180, $3.00/copy. (609) 921-9000.
Information and lists on the kinds of skills women acquire as homemakers and volunteers and how to use the information to gain college credit. Includes a workbook to use for making decisions about college programs.

Getting into Graduate School: A Selected Bibliography, Berkeley: U.C., Berkeley Women's Center, 1976. Free.
An annotated bibliography of guides to admission procedures, financial aid, and applications and to specific programs in medicine, drama, economics, and others.

Graduate and Professional School Opportunities for Minority Students. New Jersey: Educational Testing Service, 1975-77. Item #209030, $3.00/first copy, $1.00 each additional. (609)921-9000.
Lists graduate programs in U.S., including medical and law schools with information on minority students and faculty representation, financial aid and qualifying examinations.

Gray, Eileen, *Everywoman's Guide to College*. Millbrae, CA: Les Femmes, 1975. $3.95/copy.
Describes a re-entry woman's personal experiences. Also chapters on special programs for returning women, occupational outlook, financial aid, child care, and fear of success. Includes informative list of academic terms.

Lakein, Alan. *How to Get Control of Your Time and Your Life*, New York: Signet Books, 1973. $1.95/copy, 20% off on 15 copies or more for educational institutions.
(212) 956-3800.
Basic time management techniques and reasons for setting goals for busy people.

Lenz, Elinor and Marjorie Hansen Shaevitz. *So You want to go Back to School: Facing the Realities of Re-Entry*. New York, McGraw-Hill, 1978. $4.95/copy.
Readable chapters on avoiding traumas, goal setting, relationships, choosing a school and how to study for re-entry students. Includes lists of financial aid sources and professional agencies.

Malnig, Lawrence and Sandra L. Morrow. *What Can I Do with a Major In . . .* Jersey City, NJ: Saint Peter's College Press, 1975. $8.35/copy. (201) 333-4400.
Lists of job titles of graduates in 18 different college majors such as art history, philosophy, English, chemistry and so on. Should be used with basic occupational sources such as the Occupational Handbook and Dictionary of Occupational Titles for more detailed information on these jobs.

Schlacter, Gail Ann. *Directory of Financial Aids for Women*. Los Angeles: Reference Service, 1977. $15.95/copy.
Extensive listing of financial aid sources with eligibility criteria. Includes state benefits, a list of directories, women's credit unions and an important subject index.

Second Careers for Women, Vol. 2. A View of Seven Fields from the San Francisco Bay Area. Jane D. Fairbank, Helen L. Bryson, editors. Box 9660, Stanford, CA 94305, 1975. No price listed.
Essays on careers in sciences, health, social work, writing, recreation and small business by women in these fields. Includes job responsibilities, qualifications, opportunities, education and additional resources.

Stone, Janet and Jane Bachner. *Speaking Up: A Book for Every Woman Who Wants to Speak Effectively*. New York: McGraw-Hill, 1977. $3.95/copy.
Good resource for learning to deal with your fears and problems concerning speaking up in classes, meetings and to your professors and employers.

Women and Health Careers: A Guide for Career Exploration. Sheryl Burt Ruzek, editor. San Francisco: U.C.S.F., Program for Women in Health Sciences, 1978. $6.00/copy.
Excellent overview of health careers, including women's career patterns and career planning exercises. Specific health careers are also described with education required, outlook, and associations.

Women and the Power to Change. Florence Howe, editor. Sponsored by the Carnegie Commission on Higher Education, New York: McGraw-Hill, 1975. $7.95/copy.
Four excellent essays on law school, "male" careers, women and power, and a women-centered university.

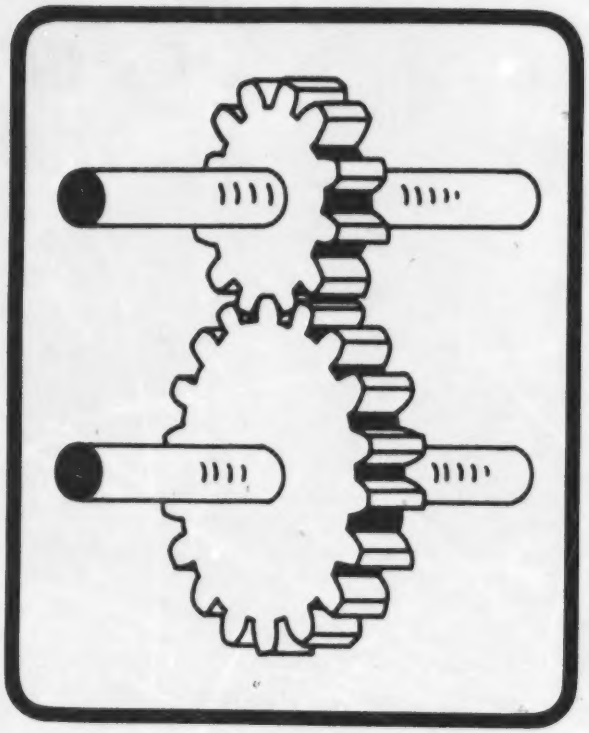
Women on Campus: Unfinished Liberation. Editors, Change Magazine, New York Change Magazine, 1975. $3.50/copy.
Various essays by women on women's colleges, reentry women, women's studies, feminist press, personal experiences and more.

Women's Educational Equity Communications Network. *Continuing Education: Reentry and the Mature Woman: Annotated Selected References and Resources*. San Francisco: Far West Labs, 1977. $3.50/copy.
Annotated bibliography of books, articles, studies on counseling resources, specific programs and projects for reentry women and personal reports.

Financial Aid

Financial Aid: A Partial List of Resources for Women, Project on the Status and Education of Women, Association of American Colleges, 1818 R St., N.W., Washington, D.C. 20009, 1978, free.
A selected guide to financial aid information for women students who are undergraduates, graduates, older women, returning students, minority women, or in professional and technical programs.

* Reprinted from *Is Berkeley the Right Place for You?* by Sheila Humphreys and Laura Ransom. The bibliography was developed by CCEW Women's Center, University of California at Berkeley.



Evaluation References

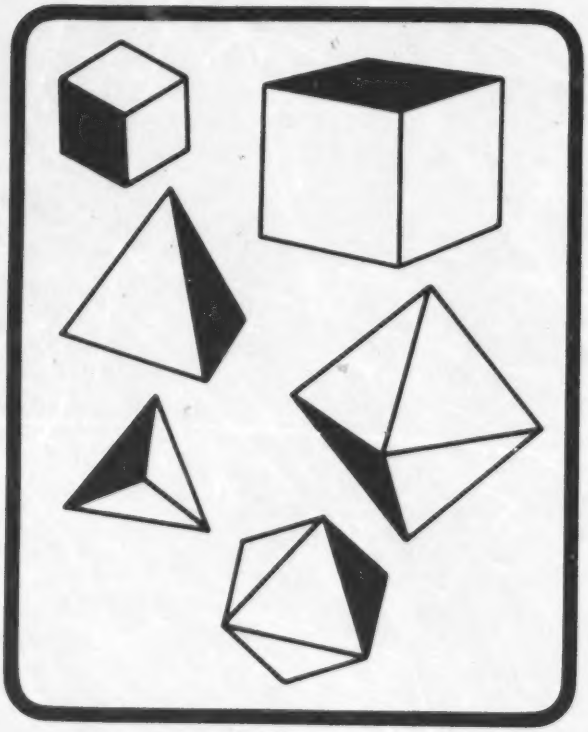
Evaluation: A Common Sense Approach, Conrad G. Katzenmeyer, Federal Resources Advisory Service, Association of American Colleges, 1977. Requests for copies may be sent to Office of Program Integration, National Science Foundation, Washington, D.C. 20050.
Adaptation of a talk addressing evaluation considerations in proposal writing.

The following resources can be obtained through lending institutions:

Program Evaluation Kit, Lynn Lyons Morris, Editor, Sage Publications, Beverly Hills and London, 1978.
Eight booklets that cover the major topics to be addressed in any evaluation, from beginning to end of project; very user-oriented, with many examples and tips.

An Evaluation Guidebook, W. James Popham, The Instructional Objectives Exchange, Los Angeles, 1972.
A basic "how to" book for the novice evaluator; explains many of the important terms and distinction in the evaluator's language; body of the book is concerned with giving the evaluator a set of guidelines to follow in doing an evaluation; helpful appendix discusses a mock evaluation.

Evaluation Research, Carol H. Weiss, Prentice-Hall, Inc., Englewood Cliffs, NJ, 1972.
Presents the rationale for evaluation of programs; discusses a variety of evaluation designs—experimental, quasi-experimental, non-experimental, and comparative evaluation; a basic "how to" book for the novice evaluator.



PRE-CONFERENCE SURVEY, SPRING 1980

We use this information to make these conferences better.
We appreciate your help and thank you.

Registration Number ☐☐☐☐☐

(1) Grade? A. 6 B. 7 C. 8 D. 9 E. 10 F. 11 G. 12 H. other _____

School? _____ City _____

(2) How did you hear about the conference?

A. teacher B. counselor C. parent D. friend E. newspaper/TV/radio F. other _____

(3) How many of these conferences have you attended before today? A. 0 B. 1 C. 2 D. 3 E. 4

(4) What is your ethnic background?

A. Asian B. Black C. Other non-white D. Spanish surname E. White

(5) How much thought have you given to the question of what you'll do when you finish your education?

A. a lot B. some C. a little D. not much

(6) What career do you think that you would like? _____

(7) Do you know anybody who has that kind of job now? A. yes B. no

(8) Do you know any women who have that kind of job now? A. yes B. no

(9) Check *all* the things that would be important for you to know about a job:

_____ A. what they do on a normal day.

_____ B. how hard it is (and that I could do it if I tried).

_____ C. that it is fun (and that I would like it if I tried it).

_____ D. how much money I would make doing it.

_____ E. that I could do it and have a family.

_____ F. how to plan my education to prepare for it.

_____ G. something else: _____

(10) Who or what influences your career plans? Circle all that are true:

A. Mother B. Father C. Other relative D. Teacher E. Counselor F. Friend

G. TV/newspaper/radio H. Books I. Myself J. Other _____

(11) Put a second circle around the person/thing that has influenced you *most*.

(12) Does your mother do scientific or technical work? A. yes B. no C. don't know

Write in the name of her job _____

(13) Does your father do scientific or technical work? A. yes B. no C. don't know

Write in the name of his job _____

These questions are about what you did in school *before* this year:

(14) Circle the grades in which you completed a math class:

A. 6 B. 7 C. 8 D. 9 E. 10 F. 11 G. 12

(15) Circle the grades in which you completed a science class:

A. 6 B. 7 C. 8 D. 9 E. 10 F. 11 G. 12

(16) Circle the grades in which you completed a shop class:

A. 6 B. 7 C. 8 D. 9 E. 10 F. 11 G. 12

These questions are about what you are doing *this* school year:

(17) Circle the name that is closest to the name of your math class:

A. None B. 7th Grade Math C. 8th Grade Math D. Algebra I, Algebra IA, Algebra IB

E. Algebra II F. Geometry G. Advanced Math H. Trigonometry I. Calculus

J. Other _____

(18) Circle the name that is closest to the name of your science class:

A. 7th Grade Science
B. 8th Grade Science
C. Physical Science
D. Earth Science
E. None
F. Biology
G. Chemistry
H. Physics
I. Advanced _____ (second year of)
J. Other _____

(19) Circle the name that is closest to the name of your shop class:

A. None B. Wood Shop C. Mechanical Drawing/Drafting D. Metal Shop E. Design

F. Electronics G. Art H. Auto Mechanics I. Other _____

(20) Circle the years that you plan to take math:

A. 7 B. 8 C. 9 D. 10 E. 11 F. 12 G. after high school

(21) Circle the years that you plan to take science:

A. 7 B. 8 C. 9 D. 10 E. 11 F. 12 G. after high school

(22) Circle the years that you plan to take shop courses:

A. 7 B. 8 C. 9 D. 10 E. 11 F. 12 G. after high school

(23) Do you plan to have these skills by the time you graduate from high school?

Typing	Computer programming	Drafting
A. yes / no	B. yes / no	C. yes / no

(24) After high school, what kind of education do you plan?

A. None B. don't know C. Junior College D. Apprenticeship E. Bachelors Degree

F. Masters Degree G. Doctorate or professional H. Other _____

POST-CONFERENCE SURVEY, 1980

Registration Number ☐☐☐☐☐

(1) What did you think about today's conference?

A. great B. good C. ok D. so so E. dull

(2) What career do you think that you would like? _____

(3) Did you meet anybody today who has that kind of job? A. yes B. no

(4) Did you learn anything today about that job? A. yes B. no

(5) Check *all* the things that you learned about that job:

_____ A. what they do on a normal day.

_____ B. how hard it is (and that I could do it if I tried).

_____ C. that it is fun (and that I would like it if I tried).

_____ D. how much money I would make doing it.

_____ E. that I could do it and have a family.

_____ F. how to plan my education to prepare for it.

_____ G. something else: _____

(6) Did you learn about some new careers today that you didn't know about before?

A. yes B. no which one(s) _____

(7) Did you think about yourself in some different careers that you hadn't considered before today?

A. yes B. no which one(s) _____

(8) Did this conference help you with your planning? A. yes B. no C. sort of

These questions are about what you plan to do in the *future*:

(9) Circle the grades in which you plan to take math:

A. 7 B. 8 C. 9 D. 10 E. 11 F. 12 G. after high school

(10) Circle the grades in which you plan to take science:

A. 7 B. 8 C. 9 D. 10 E. 11 F. 12 G. after high school

(11) Circle the grades in which you plan to take shop courses:

A. 7 B. 8 C. 9 D. 10 E. 11 F. 12 G. after high school

(12) Do you plan to have these skills by the time you graduate from high school?

Typing	Computer programming	Drafting
A. yes / no	B. yes / no	C. yes / no

(13) After high school, what kind of education do you plan?

A. None B. don't know C. Junior College D. Apprenticeship E. Bachelors Degree (4 years)

F. Masters Degree G. Doctorate or professional H. Other _____

Any other comments that you have about this conference? Put them on the back. ▷

WOMEN MOVING UP CONFERENCES — APPLICATION FORM

DEADLINE: TWO WEEKS PRIOR TO EACH CONFERENCE (October 20, October 31, November 21)

If you would like to attend a Women Moving Up Conference, please complete the following application and return this form with your registration fee to:

MATH/SCIENCE RESOURCE CENTER
Mills College
Oakland, CA 94613

Before mailing, be sure you have signed the informed consent form at the end of the application, indicated your conference and workshop selections, and enclosed your $15.00 registration fee. Cf(1)=

NAME _____ PHONE _____ ID(2-3)=

ADDRESS _____ ZIP _____

EDUCATION HISTORY* Y(4-5)=

Bachelor's degree: (Year, field, and institution) _____ F(6-7)=

_____

Graduate degree, if applicable: (Year, field, institution) _____ Y(8-9)=

_____ F(10-11)=

EMPLOYMENT HISTORY D(12)=

Are you currently employed? (1) Yes ___ (2) No ___ (13)

Please answer the following for your current or most recent job:

Job title: _____ (14-15)=

Function: (circle one)

(1) administrative (2) clerical (3) technical (4) sales

(5) other (please describe): _____ (16)

Length of time at present job: _____ _____ (17-18)=

Does your current job: (circle one answer for each question)	Use your educational training?	(1) Yes	(2) No	(19)
	Provide opportunities for advancement?	(1) Yes	(2) No	(20)
	Provide training opportunities?	(1) Yes	(2) No	(21)
	Challenge you?	(1) Yes	(2) No	(22)
	Pay you satisfactorily?	(1) Yes	(2) No	(23)

PERSONAL INFORMATION (for demographic purposes): (24-25)=

Age ___; Marital status: (1) Single; (2) Married; (3) Divorced; (4) Widowed; (5) Separated.

If you have children, what are their ages? _____ (26) (27)=

If you work, what is your salary? _____ (28-29)=

What proportion of total household income do you contribute? (Circle one)

(1) all; (2) nearly all; (3) half; (4) less than half; (5) none. (30)=

---

* If your education and/or experience are not in the sciences, please write on a separate piece of paper why you think you would benefit from the conference.

(over)

CONFERENCE SELECTION

Please indicate your first and second choices for the conference you wish to attend:

November 1 _____ (choice) November 15 _____ (choice) December 6 _____ (choice)

Workshop choices. Please indicate your first and second choice; we will do our best to accomodate your first choice.

MORNING WORKSHOPS (numbers) Conf.date: _____ 1st _____ 2nd _____

Conf.date: _____ 1st _____ 2nd _____

AFTERNOON WORKSHOPS (letters) Conf.date: _____ 1st _____ 2nd _____

Conf.date: _____ 1st _____ 2nd _____

What do you hope to gain from the conference? (31-32)=

If there are any specific topics you would like the leaders of the workshops you have selected to address, please describe them below:

The registration fee of $15.00 covers the cost of the Resource Directory, lunch, and all conference materials. Make your check payable to: Math/Science Network.
Mail the check and your application form to:

Math/Science Resource Center
Mills College
Oakland, CA 94613

Your will be notified of the status of your application one week prior to each conference.

For further information, call (415) 635-5074.

INFORMED CONSENT FORM

Information collected on this application form will be used to supply the government funding agency with a statistical summary of demographic information about workshop participants. Subsequent to the workshop, you will be asked to evaluate the workshop and provide information about your academic and career plans. None of this information will be released with names attached.

It is, of course, your prerogative to refrain from answering any questions asked of you now or at some future point in time.

I have read the information presented above describing the project evaluation activities. I agree to have the information supplied by me used as stated.

Signature: _____

WOMEN MOVING UP EVALUATION

Your answers to these questions will help us to evaluate this conference and to improve future activities. Please take a few minutes to think over the day's program and to write down your comments. Thank you in advance for your cooperation.

Please rate these components of the conference:

	poor		OK		excellent	
Overall impression	1	2	3	4	5	(31)
Panel discussion	1	2	3	4	5	(32)
Morning workshop:____ ____ ____ ____ please indicate 1 2 3 4	1	2	3	4	5	(33) (34)=
Lunch and informal interactions	1	2	3	4	5	(35)
Afternoon workshop:___ ____ ____ ____ please indicate A B C D	1	2	3	4	5	(36) (37)=

How effectively did the conference serve your needs and interests in the following areas?

	was not interested	poor		OK		very well	
career advancement strategies	0	1	2	3	4	5	(38)
career change strategies	0	1	2	3	4	5	
clarification of goals	0	1	2	3	4	5	
contacts and networking	0	1	2	3	4	5	
procedures for entering graduate school	0	1	2	3	4	5	
financing graduate studies	0	1	2	3	4	5	
necessity of graduate study	0	1	2	3	4	5	
interviewing and job search techniques	0	1	2	3	4	5	
opportunities for funding projects	0	1	2	3	4	5	
information about employers	0	1	2	3	4	5	
information about growing fields (like computer science and geoscience)	0	1	2	3	4	5	(48)

As a result of this conference, do you plan to do any of the following?

	No		Maybe		Definitely	
contact one of the workshop leaders	1	2	3	4	5	(49)
take a course in science, math, or computer science	1	2	3	4	5	
take a course in management or finance	1	2	3	4	5	
apply to graduate program	1	2	3	4	5	
apply for a new job	1	2	3	4	5	
ask for a promotion/raise	1	2	3	4	5	
other (Please describe)_____	1	2	3	4	5	(55)

Did you attend the Women Moving Up Conference on December 2, 1978? ___yes ___no (57)=

Please complete other side------

Name*_____

*If you are willing to give us your name, we will be able to match this evaluation up with the registration form, thereby locating the demographic information you provided at that time and enabling us to find out if we were equally effective in our planning for people of different educational and occupational backgrounds. We will use your name for this purpose only; all responses are confidential.

If you would prefer not to put your name on the form, please fill out the following:

EDUCATION HISTORY

Bachelor's degree: (Year, field, and institution) _____ Y(4-5)= F(6-7)=

_____

Graduate degree, if applicable: (Year, field, institution) _____ Y(8-9)= F(10-11)=

_____

EMPLOYMENT HISTORY

Are you currently employed? (1) Yes ___ (2) No ___ D(12)= (13)

Please answer the following for your current or most recent job:

Job title: _____ (14-15)=

Function: (circle one)

(1) administrative (2) clerical (3) technical (4) sales

(5) other (please describe): _____ (16)

Length of time at present job: _____ (17-18)=

Does your current job:	Use your educational training?	(1) Yes	(2) No	(19)
(circle one answer for each question)	Provide opportunities for advancement?	(1) Yes	(2) No	(20)
	Provide training opportunities?	(1) Yes	(2) No	(21)
	Challenge you?	(1) Yes	(2) No	(22)
	Pay you satisfactorily?	(1) Yes	(2) No	(23)

PERSONAL INFORMATION (for demographic purposes): (24-25)=

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If you work, what is your salary? _____ (28-29)=

What proportion of total household income do you contribute? (Circle one)

(1) all; (2) nearly all; (3) half; (4) less than half; (5) none. (30)=

_____

Do you have any other comments about the conference?

Thank you for your assistance!